

Queens

(Online Appendix)

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This Online Appendix has two sections. In Section A, we provide further information regarding the construction of our dataset and the variables used in the analysis. In Section B, we provide profiles of five key European queens in our sample.

A Details on Dataset Construction

We create a new dataset to examine the effects of female rule on war, covering European polities over 1480-1913. In the sections below, we: detail construction of the polity-year panel; describe our genealogy variables; present a comparison of our first born male variable to equivalent measures in the Human Mortality dataset; detail the construction of the war variables; present a comparison of our war data to other comparable war data sources; and provide further information on territorial change.

A.1 Construction of Polity-Year Panel

We obtain information on European polities and rulers from [Morby \[1989\]](#). This source provides a listing of various polities, the period over which each polity was in existence, as well as the time span of each ruler's reign. This information serves as the basis for our polity-year panel structure.

Polities included in the Panel—. Our main sample includes polities that had at least one queen, historically, over 1480-1913. Our auxiliary sample contains 18 additional non-queen polities that did not have any queens during this time. Both groups are listed in Table A.1 and mapped in Figure 1, which also shows the polities that are not a part of our sample.¹ As this map shows, our sample covers most of Europe including France, Italy and large swaths of areas that fall under the 'European heartlands of the Holy Roman Empire.' The European heartlands of the Holy Roman Empire are said to encompass present-day Austria,

¹Not all sample polities can be included in Figure 1 since the polities were mapped into this figure on the basis of different EurAtlas maps from different time periods. Our sample polities existed over different periods, and during some historical times, the area of one polity was covered by the territory of another. Therefore, the map is not meant to represent Europe during any given point in time, but more simply to convey the approximate coverage of our sample.

Czech Republic, Germany, Hungary, Liechtenstein, Moldova, Poland, Romania, Slovakia, and Switzerland.² Of this list, Austria, Hungary, Slovakia (via the Kingdom of Hungary), Moldova (via the Kingdom of Hungary), Liechtenstein, Czech Republic (via the Kingdom of Bohemia), and Poland are in our study sample.

Polities not included in our sample fall into one of three groups. First, they could be missing genealogy information from [Tompsett \[1994\]](#). This is the case for Kingdom of Romania. Second, they may not have had monarchies over the period of our study. This includes Switzerland, which did not have a monarchy after it emerged as an independent entity in 1648. It also includes Bosnia and Macedonia, which do not have monarchy listings in [Morby \[1989\]](#). It additionally applies to Albania, as it only had a monarchy after World War I, which falls outside of our sample period.

Third, they may have been governed by multiple rulers who we cannot match to our war data. This is the case for the German polities. Various parts of the German polities were ruled by different houses/families simultaneously, and we are unable to observe which house/family was involved in each of the different wars. As an example, consider the polity ‘House of Brunswick-Lüneburg’. According to [Morby \[1989\]](#), during the year 1524, it was ruled by four different rulers: Otto III from the Middle Line of Lüneburg, Ernest I also from the Middle Line of Lüneburg, Erik I from the Line of Calenberg-Göttingen, and Henry II from the Line of Wolfenbüttel. When Brunswick is listed as a war participant in [Wright \[1942\]](#), we are unable to discern which of these rulers actually participated in the war; or if multiple rulers fought, if they all fought for the same side.

To address the potential concern that our main sample is comprised disproportionately of larger polities that survived over a long duration, we calculate the years over which the queen polities in our main sample and the other European polities were in existence, including Romania and the German polities. For the 18 queen polities this mean length is 256 years. For the remaining polities the mean length is 255 years. This provides some indication that polities in our main sample are not comprised of those that had higher longevity,

²see <https://www.metmuseum.org/toah/ht/06/euwc.html>, accessed 9 Feb 2019.

on average, compared to the remainder of other polities including those in the European heartlands of the Holy Roman Empire.

Time Period of each Polity and the Austrian Exception—. We follow [Morby \[1989\]](#)'s timeline for the period over which each polity was in existence, with the exception of Austria. According to Morby, the Austrian Empire begins in 1804. But the actual start date of Austria is somewhat ambiguous since the polity existed under the Holy Roman Empire prior to this time, and some historical events suggest a separate Austrian entity prior to the 1800s. For example, the Austrian monarch was always also the ruler of the Holy Roman Empire, except in 1740-1799, which marked the reign of Maria Theresa, who was ruler of Austria, specifically. Other historical events point to a distinct Austrian empire as early as the mid-1600s. The end of the Thirty Years War and the Westphalian Peace in 1648 resulted in increasing autonomy among European polities. Around this time, Holy Roman Emperor Leopold I initiated a series of political changes to establish a more direct rule of the Habsburgs in Austria [[Noble, 2008](#), p.507-508]. Leopold increasingly came to depend on the Austrian archduchies, and simultaneously, his authority across the Empire as a whole diminished [[Neugebauer, 2006](#)], pointing to the influence of Austria as a separate political entity. Correspondingly, [Wright \[1942\]](#) codes Austria as a separate participant in wars, distinct from the Holy Roman Empire, starting around 1700, during Leopold's reign. We follow Wright in coding Austria as a separate polity with the start of Leopold's reign in 1658. This also allows us to capture the reign of Maria Theresa, whose reign otherwise would be omitted from the panel.

Overlapping Rule and Multiple Rule—. In our dataset, a reign is comprised of a monarch or a set of monarchs who are ruling over a given period of time. In most cases [Morby \[1989\]](#) lists only a single monarch as ruling a given polity during a given year. However, when there is a transition from one ruler to the next, there is an overlap between the first ruler's last year of reign and the next ruler's first year of reign. For these transition years, we uniformly assign the overlapping year to the new ruler's first year of reign.

There are also 16 instances in which more than one monarch is listed as being in power

during a given year. These cases of multiple rule arise for three reasons: (a) a husband and wife may have jointly ruled a polity (e.g. Isabel I and Ferdinand V in Leon and Castile); (b) two rulers who were not married may have also jointly ruled a polity (e.g. Ivan III the Great and Ivan the Younger who were a father-son pair in Russia); and (c) one monarch may have governed a polity for less than a year before a second monarch began governing. For example, consider the case of Edward V in England who became king in 1483 after the death of his father Edward IV. But Edward V too died the same year and his uncle Richard III assumed the throne. In cases like this one, we do not simply assign the overlapping year to the newest incoming ruler (Richard III) since this would completely omit the reign of the monarch who ruled only for part of the overlapping year (Edward V). We instead list the two monarchs (Richard III and Edward V) as co-rulers since they ruled during the same year.

In some instances a monarch may rule jointly with another monarch for some years and then continue to rule on his or her own. For example, Juana III from the Kingdom of Navarre (Pamplona) ruled jointly with Anthony during the period 1555-1562 and then on her own until 1571. In this example, Juana's rule with Anthony constitutes a distinct reign from the one in which she rules on her own.

A.2 Construction of Genealogy Variables

Source of Genealogy Data— While [Morby \[1989\]](#) provides information on the different polities and rulers, it does not provide detailed genealogical information for these rulers. We instead cull this information from the Catalog of Royal Family Lineages [[Tompsett, 1994](#)], which uses the same polity listing as [Morby \[1989\]](#). Where available, we collect the following information for all rulers in our sample: the ruler birth/death year, the year of marriage/divorce, number of spouses, the spouse's death year, the number of siblings,³ siblings' birth/death years, the number of children, and childrens' birth/death years. [Tompsett \[1994\]](#) does not record the gender of the different relations and so we rely on the names of

³We define siblings as those who share the same mother and father as the ruler.

the ruler, spouse, siblings and children to determine their genders.⁴ In the event of a discrepancy between Morby [1989] and Tompsett [1994] about ruler names, reign years, or the relationship with the ruler(s) of the previous reign, we favor Morby [1989].

Defining the Instrument Monarchs— Our instruments are defined on the basis of the previously reigning monarchs; i.e., whether the previous monarchs had a sibling who was female or a first-born child who was male. In most of the 193 reigns in our sample, the actual reign preceding the current reign is conceptually appropriate for identifying the relevant “instrument monarchs”, based on whom the instruments are defined for. For example, the English monarch King Charles I came to power in 1625 after the reign of his father James I, and we define James I as the instrument monarch for Charles I.

However, for 30 cases, we have to go back to further reigns to identify the conceptually appropriate instrument monarchs, primarily because monarchs ruling across multiple reigns breaks the correspondence of previous reigns to previous generations. The Online Appendix Table 1 lists these cases and the column labeled “Type” denotes why we have to go back beyond the previous reign.

Fourteen of these cases arise because family members of the previous generation ruled across multiple reigns. For instance, in four cases, we have to go back two reigns to locate parents of the relevant monarchs, who were married to one another, but also ruled during separate previous reigns. As an example, Henry III came to rule the Kingdom of Navarre (Pamplona) in 1572. The reign directly preceding his reign was that of his mother, Juana III, who ruled on her own from 1562-1571. But as discussed in the *Overlapping Rule and Multiple Rule* sub-section above, Juana also co-ruled with her husband Anthony, who was Henry III’s father, during an earlier reign. Thus, the instrument monarchs for Henry III are comprised of his parents, Juana III and Anthony. In two other cases we have to go back to locate two individuals who co-ruled together previously although the individual inheriting the throne

⁴For most of the cases in our sample, the relation’s name instantly reveals the gender. In the few instances where this not clear, we use other web sources to determine whether the child was male or female. In some cases, Tompsett [1994] lists the child’s gender but not the child’s name. For these we record the gender as listed.

was not their child, but for example, a niece or nephew. For instance, Charles V inherited the throne of the Duchy of Lorraine from his uncle, Charles IV, and we have to go back to a previous reign to include his aunt, Nicola, as the other instrument monarch.

In addition, there are two cases that involve either a nephew / uncle or niece / aunt ruling together previously; two additional cases involving a father and son ruling together previously; and four cases that have to do with siblings ruling across different previous reigns. Each of these cases also denotes circumstances in which it would be conceptually inappropriate to ignore one of the previous rulers in defining the instrument set. For example, consider the case of Catherine I of Russia, when the instrument monarchs are two siblings who ruled together. Catherine inherited the throne after the death of her husband, Peter I the Great. However, prior to that reign, Peter I co-ruled together with his brother, Ivan V. In circumstances like this one, both siblings could have generated offspring who could have potentially inherited the throne, and therefore the instrument monarchs in this case include both Peter I and his brother Ivan V. In fact, both the daughter of Catherine I (Elizabeth Petrovna) and the daughter of Ivan (Anne), *did* go on to become reigning monarchs in Russia. Therefore, locating the conceptually relevant instrument monarchs also strengthens the first stage.

On top of the fourteen cases detailed above, there are another fifteen cases that emerge because of the complexities arising from the monarchs who rule across multiple reigns themselves, and we need to reach back to avoid previous reigns that were comprised of just themselves or of them and their spouses. For example, in the case of Juana III and Anthony of Navarre described above, the reign prior to when Juana ruled by herself was comprised of Juana and her husband Anthony. We then have to go back two reigns to locate an appropriate instrument monarch, her father, Henry II. These cases are denoted by type “Second reign of ruler” in Online Appendix Table 1.

Finally, there is one exceptional case that does not fit easily into any of these other categories. This occurs in the Duchy of Lorraine, when a father and son (Francis II and Charles IV, respectively) co-rule together. Their reign follows the reign of Charles’ wife (Nicola), who

was also Charles' first cousin. In this case we reach the previous generation by going back one reign further to Henry II, who was Charles' uncle, and also his wife's father.

Reigns with Single Queens—. In our sample, there are 10 queenly reigns in which queens were single over their reign, either because they were queens who never married, or had yet to marry, or had already been married but became widowed. We also have 24 queenly reigns in which the queens were married at some point during their reign. Online Appendix Table 2 provides a listing of these reigns. As can be seen from this list, both single and married reigns emerge from polities of different varieties, including major polities such as Russia, England, Portugal and Spain, which are common to both groups, as well as smaller polities such as the Duchy of Bourbonnais and Luxemburg.

In Online Appendix Table 3, we compare single queen reigns to married queen reigns to see if they appear significantly different from one another in terms of our measures of war and internal stability. We run simple OLS regressions of war, reign length and whether a monarch died a unnatural death on an indicator of single queenly reigns, restricting the sample to queenly reigns alone. The estimates suggest that unmarried queenly reigns did not look different from married queenly reigns in terms of their inherited conflict and instability in past reigns.

Queens who came to Power with Living Brothers—. In our sample, male preference in accession can be seen from the relatively few cases in which queens came to power while there was a living brother at the time of accession. Of the 29 queens in the sample, there were six cases in which the monarchs in the previous reign had a male first-born child; but of these six, there was also only one case in which the male child was living at the time of the queen's accession. This was the famous case of Mary II, who came to power along with her husband William III, after his victorious invasion of England in November 1688, in the Glorious Revolution. They deposed James II, Mary's father, who fled the country. Mary had a half brother, James Francis Edward, who was the son of James II and his second wife. He was only a year old when the Revolution occurred, and smuggled out of England to France when the invasion occurred.

In addition, among the nine cases in which the previous monarchs had a first-born female (and multiple children) there was only one case in which a younger male child was living at accession. This was the case of Louise Hippolyte who acceded as the queen of the Principality of Monaco (in 1731). Her father, Antonio I, also had a son named Antoine Grimaldi, who was alive at time of accession. There are conflicting accounts of whether Antoine was even a legitimate child, which may be what precluded him from the throne.

Unnatural Death of Monarchs— We use data from [Eisner \[2011\]](#) to code whether a ruler died an unnatural death. For each ruler, [Eisner \[2011\]](#) identifies unnatural deaths to include those killed by murder, in battle, by accident, by legal execution, or by extrajudicial execution. We supplement [Eisner \[2011\]](#)'s list with other web sources, especially since [Eisner \[2011\]](#) only codes regicide information through 1800. We code a ruler to have died an unnatural death if there is a specific mention of such a killing in these sources.

A.3 Comparing Sex Ratios in Tompsett and the Human Mortality Database

We compare the sex ratio at birth from our genealogical data source to the male-female birth ratio for European countries provided in the Human Mortality Database (HMD).⁵ In particular, we focus on the country-level number of (male and female) births provided in the HMD data. Various national and academic sources are used to calculate the number of births, and the HMD website provides a list of sources by country. We used data for all available European countries that match our polities, and we also restricted the data to the period before 1913. This provides us with a total of eight countries that we can use for the comparison: Belgium, Italy, Denmark, Scotland, Netherlands, Sweden, Portugal and Austria. We found that the overall median male to female sex ratio in the HMD database is 52.73% (with the lowest ratio of 51.06% in Sweden, and the highest ratio of 55.78% in Portugal). It is reassuring that these ratios are similar to and also bracket the ratio of 54% in our dataset, as calculated based on Tompsett's genealogy variables.

⁵The Human Mortality Database is available at <http://www.mortality.org/>.

A.4 Construction of War Variables

Other than kingdom and ruler genealogy data, we also use information on wars in Europe. Specifically, we required information that identified the participants in a war along with their entry/exit dates for each war. Wright [1942] provides a comprehensive listing of wars during this period. This list primarily includes “all hostilities involving members of the family of nations, whether international, civil, colonial, imperial, which were recognized as states of war in the legal sense or which involved over 50,000 troops” [Wright, 1942, p.636].

Wright also includes “hostilities of considerable but lesser magnitude, not recognized at the time as legal states of war, led to important legal results . . .” [Wright, 1942][p.636]. In sum, Wright [1942] considers the scale of war, its recognition and associated legal and political ramifications in determining whether an armed conflict constitutes a war. He also distinguishes between different types of wars. They are: (1) Balance of Power War - war among state members of the modern family of nations;⁶ (2) Defensive War - war to defend modern civilization against an alien culture; (3) Imperial War - war to expand modern civilization at the expense of an alien culture; and (4) Civil War - war within a state member of the modern family of nations [Wright, 1942, p.638,641].⁷

We aggregate these different types of wars together to define participation in wars of any type. This is both the most comprehensive measure and averts potential discrepancies or controversies in how Wright categorized these wars. However, we also analyze participation in each type of war separately in an appendix table.

War Start / End Dates—. Wright [1942]’s list of wars is also useful for our purposes since it provides a list of participants and their entry/exit dates in each war. The start date of a war

⁶The family of nations is meant to formally demarcate states that share commonalities based in treaties, and diplomatic relations, but it refers, for the most part, to the European nations. Indeed, almost all balance of power wars occur among European nations. The exceptions are: (1) there are eight wars involving Turkey in which there is a European aggressor and (2) there are also six wars involving a European polity and a non-European power such as Japan (e.g. Russian-Japanese war in 1904-1905).

⁷Wright [1942]’s definition of civil wars sometimes includes cases in which there is more than one European participant involved in the war. For example, the Japanese Restoration is coded as a civil war which includes both England and France as participants. Hence we disaggregate the civil wars measure based on whether the war involves one or multiple European participants.

is determined based on “first important hostilities” [Wright, 1942, p.638], and the end date of a war is based on “the date of signature of a treaty of peace, or the date of its going into effect if that is different, . . . the dates of armistice, capitulation, or actual ending of active hostilities . . .” [Wright, 1942, p.637]. In cases where entry/exit dates of specific participants were not provided, we used the war start/end dates.⁸

Aggressor information—. Wright [1942] also provides information on participants and aggressors in a war. The information on aggressors (i.e. the side that initiated a war) allows us to determine whether a polity attacked or was attacked.

A.5 Comparing Wright War Data to Other War Data

We also compare how Wright [1942] lines up with other data sources that contain comparable information. One alternative source is the Correlates of War (COW) dataset [Sarkees and Wayman, 2010] which contains information on wars from 1816 onwards. Since COW records inter-state wars, we compare it with our list of balance of power wars, for wars involving at least one queen polity, over 1816-1913. We find that there are 17 common wars in the two data sources, for the time period overlapping between the two sources. In addition, our data covers an additional 16 wars that are not in COW. In contrast, there are just three wars that exist in COW which are not in our sample. These are minor wars that involve six polity years which represent far less than one percent of the total polity-years in our panel data.

Another alternative war data source is Levy [1983], which tracks wars fought among the “Great Powers”, starting from 1495 (p.88-91). The great powers are restricted to a set of 10 major European polities (and also include the United States, the Ottoman Empire, China and Japan). Given this scope restriction, unsurprisingly, the Levy [1983] data source also contains fewer wars than the Wright [1942] data source. When we compare the list of balance of power wars in our main sample to this alternate data source for the 1495-1913

⁸We matched wars involving Spain before 1516 to the polities of either Aragon or Leon & Castile. This is because Wright [1942] lists Spain as a participant in wars prior in the late 15th century (e.g. War of Granada) but the Kingdom of Spain only begins in 1516 in Morby [1989].

period, we find that the two sources contain 54 common wars. However our sample also contains an additional 103 wars that are not in Levy [1983]. In contrast, there are only 10 wars that exist in Levy [1983] that are not in our sample. These wars again seem to be relatively minor in that they span 40 polity years in total, which represent just one percent of the total polity-years in our panel data.

These comparisons indicate that the Wright [1942] data is comprehensive in its coverage of European wars, far more than either of these other data sources. If we used Levy [1983] we would lose 12 of 18 polities with queens from our main sample. If we used the COW dataset, we would lose over 300 years from our panel, as the COW dataset only begins in 1816.

A.6 Territorial Change

We use the the Centennia Historical Atlas (CHA) to calculate territorial change during a reign.⁹ The Centennia Atlas is a commercial product created by Frank Reed that displays territorial boundaries of European polities at intervals of a tenth of a year from the beginning of the 11th century through the early 21st century. It accounts for territorial changes including those arising from wars, and is meant to reflect “power on the ground.” This makes it well-suited for understanding territorial changes in our research context, as we aim to understand whether there was territorial expansion or contraction in a given reign, inclusive of changes that may have arisen as a consequence of war.

The CHA documents the borders of different European polities, and for each year, provides 10 continental snapshots over time. We identify the home territory of a polity (based on the years of existence listed in Morby [1989]) and then visually compare the area of the first and last maps of a reign. As an example, for a reign that spanned three years, we compare the maps at the beginning of the first year and the end of the third year. If there was an increase in a polity’s area at the end of the reign, we code this as territorial gain. We are not able to observe the area by which the territory changed without the underlying GIS

⁹The Atlas is available at <http://www.historicalatlas.com/>.

information from CHA. We also could not identify the polities of Burgundy, Austria, Bourbonnais and Luxembourg in CHA either because their home territories were not marked or their years of existence did not match [Morby \[1989\]](#). As a result, we were able to measure indicators of territorial change for 14 queen polities.

B Queen Profiles

In this section, we provide further background information on five queens in our sample, focusing on their war participation and foreign policy engagement. The profiles below cover: Isabel of Leon and Castile; Elizabeth of England; Christina of Sweden; Maria Theresa of Austria; and Victoria of England.

Queen Isabel of Leon and Castile

Isabel I was the ruler of Leon & Castile over 1474-1503. She was the daughter of Juan II and Isabel of Portugal and came to power at the age of 23. She acceded subsequent to her half-brother, Henry IV of Castile.

Isabel married Ferdinand of Aragon in 1469, prior to her accession. With support from Ferdinand, Isabel is considered to have played a pivotal role in Spanish history [[Downey, 2015](#)]. She paved the path for exploration of the new world, and embarked on numerous military conquests, with Ferdinand playing an active role in these endeavors.

One notable conquest was the War of Granada. This war was waged against the Nasrid dynasty in the emirate of Granada. It lasted nearly a decade, and resulted in the defeat and annexation of Granada to Castile. Thus it ended Muslim rule in Iberia and helped regain territory that the Spanish had lost nearly 700 years earlier [[Drayson, 2017](#)].

The war also proved pivotal in the creation of a well-trained army, which proved instrumental in future Spanish wars. Ferdinand played an important leadership role throughout the war, taking charge of day-to-day policy toward the Nasrid sultanate, and ultimately, determined the terms of cession [[Abulafia, 2014](#)].

Even though Isabel enlisted Ferdinand to command her armies, she herself remained involved in various military campaigns. During the War of Granada, she rode with the Castilian army wearing battle armor on a warhorse [Jansen, 2002, p.21]. During a war with her niece Juana, she rode throughout her territory to garner support for her cause [Jansen, 2002, p.21]. Thus, though she utilized her husband to help her rule, Isabel maintained her own decision-making authority and direct involvement in crucial military endeavors.

Shortly after the war of Granada, Isabel also agreed to finance Christopher Columbus' 1492 voyage in which he arrived in the West Indies. This launched Spain into a golden age of exploration and colonization, and marked the beginnings of the Spanish empire.

Queen Elizabeth of England

Queen Elizabeth I was the ruler of England during the period 1558-1602. She was the eldest child of Henry VIII and his second wife, Ann Boleyn. After her half-sister, Queen Mary I, died without having any children, she became queen at the age of 25. Through her long reign, Elizabeth had a profound influence on various aspects of English and European politics [Weir, 1999]. She presided over a Golden Age in England, marked by prosperity and an assertion of England as a global power.

Elizabeth herself was described as erudite, with a personal style that made her highly effective in diplomatic communication [Monter, 2012, p.140]. A notable feature of her reign is that she never married. Elizabeth described her coronation as her marriage to her kingdom [Monter, 2012, p.139]. However, this did not stop her from entertaining many suitors, and using discussions around marital prospects as a diplomatic and foreign policy tool. This process continued throughout her reign until she reached an age when such prospects no longer seemed credible.

One of Elizabeth's first challenges was restoring the Church of England amidst religious tension between Catholics and Protestants since Mary, as queen, had made England a Catholic country. Elizabeth put into place the Religious Settlement, which made her

“Supreme Governor” of the Church of England rather than its “Head”, the designation used by past monarchs such as her father, Henry VIII. This was a compromise with Catholics who felt that the Pope alone could be the head of the church. Overall, the settlement was considered relatively successful in reducing some of the immediate tensions.

Religious politics also played a role in the notable military conflict that emerged during her reign. During the War of the Spanish Armada, Philip II, King of Spain (and Mary’s husband prior to her death), attacked England with the aim of unseating Elizabeth from the throne and restoring Catholicism to England. Philip amassed what was then the largest ever fleet, of 130 Spanish ships. Yet the English forces successfully repelled the Spaniards, defeating them soundly. The English victory emerged in part from a strategic maneuver in which they sent burning ships into the harbor where the armada was anchored. The Spanish ships were forced to cut their anchors and sail out to sea to avoid catching fire. They were then attacked by English ships and forced to retreat.

During this war, Elizabeth gave the following speech to inspire her troops [Green, 1997, p.443]:

I know I have the bodie, but of a weak and feeble woman, but I have the heart and Stomach of a King, and of a King of England too, and think foul scorn that Parma or Spain, or any Prince of Europe should dare to invade the borders of my Realm, to which rather than any dishonour shall grow by me, I my self will take up arms, I my self will be your General, Judge, and Rewarder of everie one of your virtues in the field.

After the defeat, England’s Dutch allies developed mocking medals with sunken Spanish ships, one of which reportedly said, “Done by a female leader” [Monter, 2012, p.145].

While weathering this attack was held to be one of England’s greatest military achievements and boosted England’s position as a world-class power, overall, Elizabeth’s foreign policy has been characterized as cautious and largely defensive in nature [Haigh, 2000]. For example, the military conflict between England and Spain continued after the Armada, and

during these latter years, Spain generally performed better, consolidating its power — an outcome some have attributed to Elizabeth’s overly cautious approach in engaging Spain militarily [Haigh, 2000].

The end of Elizabeth’s reign was marked by greater challenges and misfortune: the conflict with Spain dragged on, the economy was hit by poor harvests, and her persecution of Catholics intensified [Haigh, 2000]. This stands in stark contrast to the long golden era encompassed within her reign, typified in the adage, “the Elizabethan era.”

Queen Christina of Sweden

Queen Christina was the ruler of Sweden during the period 1632-1653. She was the younger daughter (and only surviving child) of Gustav II Adolf and Maria Hohenzollern. She received rigorous training starting from an early age. She attended state councils by age 13 and presided over them by the time she was 18 [Monter, 2012, p.145-146].

Christina also never married, and expressed a distaste for marriage starting from a young age, when she became intrigued by Catholicism and the merits of celibacy [Garstein, 1991]. In direct contrast to Queen Elizabeth of England, she despised flirtation with prospective suitors and did not use these potential matches as an extension of her foreign policy [Monter, 2012, p.147].

Though she was a ruler, and considered to be largely successful, Christina repeatedly and strongly expressed the notion that women were unfit to rule. For example, she argued to her councilors that Sweden should have a male ruler which would give the kingdom “a champion, who, when war threatened, could ride with his people to battle, while a woman could not [Monter, 2012, p.147].” In that regard, she helped perpetuate the gendered notion that women were unfit to rule on account of their inability to serve as military leaders.

Despite these statements, when she found herself embroiled in the Thirty Years’ War, she oversaw several military victories. These ultimately produced sizable territorial gains for Sweden when the hostilities drew to an end [Monter, 2012, p.146].

Christina was in fact also an admirer of military grandeur, and adopted several masculine forms of self-depiction when her armies proved victorious in battle. She became the first female ruler to depict herself on coins with laurel wreath and not a crown, and she had many medals with overtly militaristic associations [Monter, 2012, p.148].

Despite these military victories and her generally successful rule, posthumously, she was not particularly popular within Sweden because of her abrupt abdication and repudiation of Sweden's national Lutheran church. She studied Catholicism secretly during her rule, and ultimately, abdicated so she could convert to Catholicism. Thus she became Europe's only female monarch to abdicate voluntarily after governing successfully [Monter, 2012, p.147].

Queen Maria Theresa of Austria

Queen Maria Theresa was the ruler of the Austrian Empire during the period 1740-1779. She was the daughter of Charles VI and Elizabeth Brunswick-Wolfenbüttel, and came to rule after Charles VI put into place the Pragmatic Sanction, which enabled female rule in the Habsburg succession [Beales, 2014, p.127].

During her reign, Maria Theresa oversaw large-scale administrative and financial reforms that boosted the security and position of the Austrian monarchy. Her husband, Francis Stephen, played a critical role in these accomplishments. Francis Stephen served as her prince consort in Austria and was eventually also elected Holy Roman Emperor. But in many regards his most important role was that of Maria's consort [Beem and Taylor, 2014, p.6]. During their reign the two monarchs were said to rule together in both the mutual respect and affection, and "with a near seamless division of authority [Beem and Taylor, 2014, p.6]."

Soon after Maria Theresa came to power, Frederick II, King of Prussia attacked and overran the critical province of Silesia. This underscored Austria's need for a standing army, for both reconquering Silesia and boosting security generally.

Maria Theresa had little experience dealing with these types of challenges. This stood

in contrast to Francis Stephen, who, as Duke of Lorraine and Grand-Duke of Tuscany had played a prominent role in governing Hungary and Tuscany. Through these roles, he had run military campaigns and commanded armies, and become particularly shrewd in matters of finance [Beales, 2014, p.130].

Maria Theresa leveraged his experience immediately. She tasked him with overseeing the centralization of administration with the aim of drawing in greater revenue. He was indispensable in pushing through critical reforms that achieved both centralization and modernization of the monarchy's government, while reducing the independence of individual provinces. These reforms had the direct consequences of reducing debt and vastly boosting the monarchy's financial standing [Beales, 2014, p.135], positioning Austria to be able to pursue its military campaigns.

Though Maria Theresa relied heavily on her husband, she was at times resistant to following the advice of her ministers, displaying an independent streak in war and foreign relations. For example, during the attack on Silesia, she resisted their advice to give in to Frederick and decided to fight back. Though she had to eventually cede Silesia, with support from Francis, she was able to achieve a lot militarily. She was able to banish the Bavarians from the province of Upper Austria. She went further and invaded both Bavaria and Bohemia and also retook Prague from the French with great celebration [Monter, 2012, p.168].

She achieved most of her major political and military successes before Francis Stephen's death in 1765 [Monter, 2012, p.173]. In contrast, she spent most of her widowhood secluded in her palace. During that time, she pursued fewer administrative reforms and notably did not participate much in military conflicts.

Queen Victoria of England

Queen Victoria was the ruler of England over 1837-1900. She was the daughter of Edward Augustus and Victoria of Saxe-Coburg. She became queen upon the death of her uncle,

William IV, and ruled the polity for more than six decades. During this time, she had a profound influence in shaping the British empire. Over the course of her reign, the empire doubled in size, encompassing Canada, Australia, India and various locations throughout the Africa and the South Pacific.

Victoria was highly educated and described to be politically astute [Monter, 2012, p.217]. She chose to marry Prince Albert of Saxe-Coburg and Gotha, who was her cousin and the son of King Leopold I of Belgium, Victoria's uncle and first political mentor [Monter, 2012, p.218].

Albert was Queen Victoria's most trusted advisor, and helped shape both her colonial policy and public relations image [Urbach, 2014]. Albert felt that foreign affairs were an important traditional field of monarchical influence, and that empire could play a key role in shaping the monarchy's foreign relations. He took a particular interest in the Indian empire, an interest which she subsequently adopted. In fact, Victoria became the first European female monarch to be promoted to empress, of India, in 1876 [Monter, 2012, p.217].

Britain's expansion during Victoria's reign resulted in part from waging aggressive imperial wars. This included multiple wars in Asia, including those fought against the Afghans (First Afghan War), China (Second Opium War) and India (Sepoy Mutiny). It also included the Boer Wars in South Africa.

During her reign, there was a growing republican movement in Britain which called into question the importance of the Royal Family. To address this public relations threat, Albert played a crucial role in revamping the image of the monarchy. As a part of this strategy, the couple began going on civil visits to industrial towns such as Leeds, building on Albert's emphasis on the importance of industrial development. They also began taking active steps such as attending military reviews to support the armed forces. Victoria introduced the Victoria Cross to honor her troops for acts of bravery. She spent endless hours waving soldiers off, attending parades, and handing out medals to honor "her brave soldiers" [Urbach, 2014, p.151]. These steps helped to boost the monarchy's image and left Queen Victoria with the political positioning to be able to implement her colonial policies.

After Prince Albert died, Queen Victoria was inconsolable with grief. She largely withdrew from public life, though she continued to govern by meeting her ministers and giving audiences to foreign visitors. However, she was less active in governing and pursuing expansionary objectives during this latter part of her reign.

Overall, however, Victoria's reign witnessed the greatest-ever expansion of territory held by Britain. By the end of her rule, the empire "extended over about one-fifth of the earth's surface and almost a quarter of the world's population at least theoretically owed allegiance to the 'queen empress' [Evans, 2011]."

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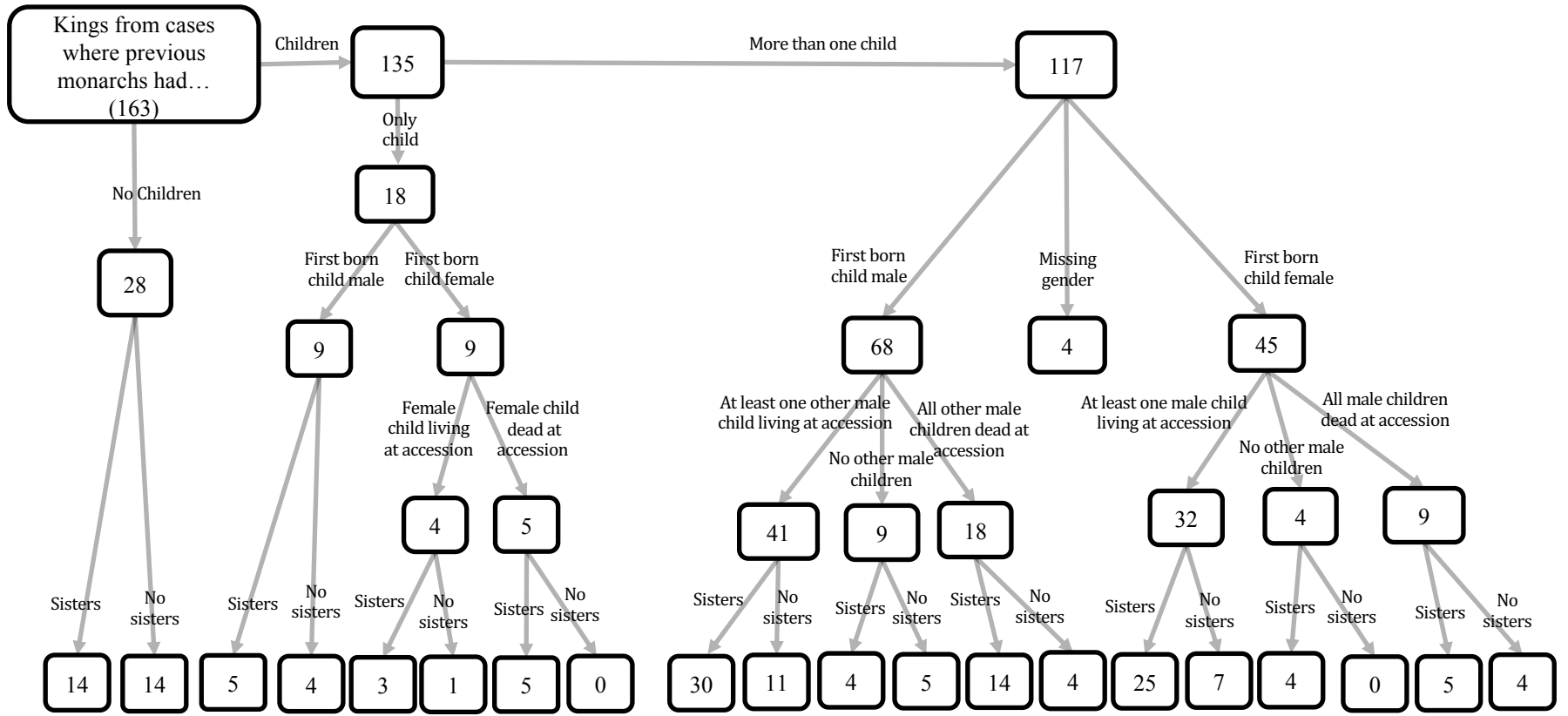
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Online Appendix Figure 1
Circumstances under which Kings Came to Power



Notes: This figure shows the circumstances of the previous monarchs for the 163 kings in our sample. For example, the previous monarchs had children in 135 of 163 king cases, and had multiple children in 117 cases. The first born child was male in 68 of these cases, of unknown gender in 4 cases, and female in 45 cases. Among these 45, in 32 cases, there was at least one (younger) male child living at the time accession occurred.

Online Appendix Table 1
Previous Reign and Instrument Monarchs

Polity	Ruler 1	Ruler 2	Previous Reign Ruler 1	Previous Reign Ruler 2	Instrument Ruler 1	Instrument Ruler 2	Type
England	Richard III		Richard III	Edward V	Edward IV		Second reign of ruler
England	Henry VII		Richard III		Richard III	Edward V	Uncle/nephew ruled previously
England	Mary I		Mary I	Jane		Edward VI	Second reign of ruler
England	Elizabeth I		Mary I		Mary I	Jane	Aunt/niece ruled previously
England	William III		Mary II	William III	James II		Second reign of ruler
England	Anne		William III		Mary II	William III	Husband-wife ruled previously
Bourbonnais	Peter II		Peter II	Charles II	John II		Second reign of ruler
Bourbonnais	Suzanne		Peter II		Peter II	Charles II	Siblings ruled previously
Bourbonnais	Suzanne	Charles III	Suzanne		Peter II	Charles II	Siblings ruled previously
Bourbonnais	Charles III		Suzanne	Charles III	Peter II	Charles II	Siblings ruled previously
Monaco	James		Louise Hippolyte	James	Anthony		Second reign of ruler
Monaco	Honore III		James		Louise Hippolyte	James	Husband-wife ruled previously
Navarre	Catherine	John III	Catherine		Francis Phoebus		Second reign of ruler
Navarre	Juana III		Anthony	Juana III	Henry II		Second reign of ruler
Navarre	Henry III		Juana III		Anthony	Juana III	Husband-wife ruled previously
Spain	Felipe V	Louis I	Felipe V		Carlos II		Second reign of ruler
Spain	Joseph Napoleon		Ferdinand VII	Joseph Napoleon	Carlos IV		Second reign of ruler
Spain	Ferdinand VI		Philip V		Philip V	Louis I	Father/son ruled previously
Spain	Ferdinand VII		Joseph Napoleon		Ferdinand VII	Joseph Napoleon	Second reign of ruler
Portugal	Maria I		Maria I	Pedro III	Joseph I		Second reign of ruler
Portugal	John VI		Maria I		Maria I	Pedro III	Husband-wife ruled previously
Lorraine	Charles IV	Francis II	Nicola		Henry II		Exception
Lorraine	Charles IV		Charles IV	Francis II	Henry II		Second reign of ruler
Lorraine	Charles V		Charles IV		Nicola	Charles IV	Husband-wife ruled previously
Russia	Ivan III, the Great		Ivan III, the Great	Ivan the Younger	Ivan III, the Great		Second reign of ruler
Russia	Vasily III		Ivan III, the Great		Ivan III, the Great	Ivan the Younger	Father/son ruled previously
Russia	Peter (Pyotr) I		Peter (Pyotr) I	Ivan V	Theodore III		Second reign of ruler
Russia	Catherine I		Peter I, the Great		Peter I, the Great	Ivan V	Siblings ruled previously
Russia	Catherine II		Peter III	Catherine II	Elizabeth Petrovna		Second reign of ruler
Russia	Paul (Pavel)		Catherine II		Peter III	Catherine II	Husband-wife ruled previously

Notes: The Ruler 1 and 2 columns list the ruling monarchs. The Previous Reign Ruler 1 and 2 columns list the monarchs who ruled in the directly preceding reign. The Instrument Ruler 1 and 2 columns show the monarchs used in the instrument. Type is the reason why the instrument monarchs differ from the monarchs in the previous reign.

Online Appendix Table 2
Single and Married Queen Reigns

Polity	Ruler 1	Ruler 2	Reign Start Year	Reign End Year
<i>Single Queen Reigns</i>				
England	Elizabeth I		1558	1602
Bourbonnais	Suzanne		1503	1504
Luxemburg	Marie Adelaide		1912	1913
Navarre	Catherine		1483	1483
Navarre	Juana III		1563	1571
Portugal	Maria I		1786	1815
Sweden	Christina		1632	1653
Russia	Catherine I		1725	1726
Russia	Anne		1730	1739
Russia	Catherine II		1763	1795
<i>Married Queen Reigns</i>				
England	Mary I	Jane	1553	1553
England	Mary I		1554	1557
England	Mary II	William III	1689	1695
England	Anne		1702	1713
England	Victoria		1837	1900
Scotland	Mary		1542	1566
Bourbonnais	Suzanne	Charles III	1505	1521
Brittany	Anne		1488	1514
Monaco	Louise Hippolyte	James	1731	1731
Burgundy and the Low Countries	Mary*		1480	1481
Netherlands	Wilhelmina		1890	1913
Florence	Marie Anne		1809	1813
Parma	Marie Louise		1814	1846
Leon and Castile	Isabel I*	Ferdinand V	1480	1503
Leon and Castile	Juana	Philip I	1504	1506
Navarre	Catherine	John III	1484	1516
Navarre	Anthony	Juana III	1555	1562
Spain	Isabel II (Isabella II)		1833	1867
Portugal	Maria I	Pedro III	1777	1785
Portugal	Maria II		1834	1852
Sweden	Ulrika Eleonora		1718	1719
Russia	Elizabeth Petrovna		1741	1761
Russia	Peter III	Catherine II	1762	1762
Austria	Maria Theresa		1740	1779

Notes: Reign start and end years are based on our sample.* indicates cases where the monarchs started ruling in earlier years but they appear in our dataset from 1480, which is the first year of our dataset.

Online Appendix Table 3
Internal Instability in Single vs. Married Queen Reigns

VARIABLES	(1) In War - Previous Reign	(2) Reign Length - Previous Reign	(3) Monarch Killed - Previous Reign
Single Queen Reign	0.042 [0.848]	-4.888 [0.515]	0.160 [0.393]
Observations	547	547	506
R-squared	0.987	0.988	0.970
Mean of DV	.623	14.051	.245
Specification	OLS	OLS	OLS
	Queenly Reigns	Queenly Reigns	Queenly Reigns
Sample Restriction	Only	Only	Only
Standard Controls	Y	Y	Y
Flexible Sibling Control	Y	Y	Y
Age Controls	Y	Y	Y

Notes: Variables not shown include polity and decade fixed effects. Standard errors are clustered at the Broad Reign level, and bootstrapped (with 1000 replications) using the Wild Bootstrap procedure. In all columns, bootstrapped p-values are shown in square brackets. ** is significant at the 1% level, * is significant at the 5% level, † is significant at the 10% level.

Online Appendix Table 4
Effects by Marital Status: First Stages

VARIABLES	(1) Queen	(2) Queen x Married
FBM_{t-1}	-0.346* [0.038]	0.006 [0.943]
FBM_{t-1} x Married	0.218 [0.182]	-0.187 [†] [0.057]
Sister_{t-1}	0.563* [0.013]	0.194 [†] [0.074]
Sister_{t-1} x Married	-0.307 [0.182]	0.037 [0.773]
Married	0.122 [0.632]	0.324* [0.027]
Accession Age	0.005 [0.483]	-0.002 [0.337]
Accession Age x Married	-0.008 [0.285]	-0.001 [0.72]
Observations	3,586	3,586
R-squared	0.629	0.598
Standard Controls	Y	Y
Flexible Sibling Controls	Y	Y

Notes: This table shows the first stage for the specifications in Table 6- Columns (1) and (2). The first column shows the first stage for the Queen variable and the second column shows the first stage for the Queen x Married variable. All columns include polity and decade fixed effects as well as indicators of missingness in Accession Age and Married and their interactions. Standard errors are clustered at the broad reign level, and bootstrapped (with 1000 replications) using the Wild Bootstrap procedure. Bootstrapped p-values are shown in square brackets. ** is significant at the 1% level, * is significant at the 5% level, † is significant at the 10% level.