THE INSTITUTIONAL PARADIGM AT WORK IN 14TH-17TH C.: THE BASIS OF ECONOMIC PROSPERITY IN RAGUSA/DUBROVNIK

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“Among permanent institutions [the first] is responsible to preserve justice and order among wholesale and retail merchants, and customers, irrespective of whether they are foreigners or citizens”

Filip de Diversis, Ragusa: 1440

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[PRELIMINARY DRAFT –NOT TO BE CITED WITHOUT PERMISSION]
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DATA APPENDIX 9(as above)
I INTRODUCTION AND MOTIVATION

Over the period 1300-1800, The Republic of Ragusa (today Dubrovnik), despite a tiny population of well below 100,000 and very small infertile territory that was difficult to defend, achieved a remarkable degree of economic prosperity and disproportionate importance in Mediterranean trade. Its achievements have been recognized by contemporaneous and modern historians, and most attribute this not to mere luck of location, but good governance with atypically benevolent rule providing many basic needs of commoners, institutions favorable to commerce, upward class mobility, and meaningful rule-of-law. Thus Lane’s history of Venetian maritime prowess points to Ragusa as the principal rival of much larger Venice; Braudel –albeit briefly- remarks on this “jewel of the Adriatic” and how its ships were able “to snatch away goods from under the very eyes of Venetian merchants.”

This paper’s novelty is two-fold: first it will reassess these favourable views of Ragusa using a quantitative data we compiled from secondary sources, and second, albeit more tentatively, it will provide selective qualitative evidence to illustrate its favourable institutional and rule-of-law environment. By implication a third contribution will be, using the example of Ragusa, to show that the modern-day “Institutional Paradigm” (the critical role of good institutions in promoting economic prosperity) goes back at least to the 13th C. We recognise that Ragusa was not unique in that regard, as several Northern Italian city-states followed similar development models. Further, there may be cases of Mediaeval Tigers elsewhere in the world, perhaps one being the Ryukyu Kingdom in the 15th-16th C. which analogously was a formal tributary of a much bigger power, China, but with extensive autonomy and emphasis on maritime trade achieved a disproportionate importance and prosperity in the North pacific region.

Most of the literature on Ragusa, even the most recent, is based on qualitative analysis with little or no use of the quantitative methods that are increasingly common in economic and historical research. We undertake to apply a quantitative approach to test some of the main interpretations in the literature about Ragusa’s success, using data culled from secondary sources. Ours is not the first study of Ragusa to use data, but we believe it may be the first to do so systematically rather than fragmentarily, and to generate time series of data proxying economic activity approximately over the period 1300-1800.

A few clarifications on methodology. While we use a quantitative approach the data will not be strong or comprehensive enough to allow econometric analysis, but at most tabular/ graphical presentation showing visual correlation, and some bivariate correlation tests. Our secondary data source is the historical literature: we compile any

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3 The paper might be considered a mirror-image of the approach in Kuran (2011), starts with the same principle we do -“when communities differ in their economic accomplishments, the reason often lies in the legal regimes under which they conduct business”- though his purpose is top show that inadequate institutions explain why the Ottoman-Muslim Empire fell behind in the Middle Ages.

4 Venice is given some attention here, as Ragusa’s model, nemesis, and main competitor in trade.

fragmentary statistics there into a time-series. Most such statistics are based on primary, archival sources, but are very partial and sometimes vaguely stated in words. There is however enough coverage over a long time for many relevant variables: shipping tonnage, fleet sizes, population, wealth indicators, customs revenues, consular activities, budget data, even some crude Maddison-type estimates of GDP. For institutional variables current research uses data compiled by the World Bank, EBRD, Transparency International, Polity IV, Freedom House and others. It would be unfeasibly heroic to attempt giving analogous metric to institutions in mediaeval era, nevertheless, our analysis of institutional determinants will be cast as much as possible using such concepts as governance, voice, corruption, Rule-of-Law (ROL), ease of doing business (EDB), financial prudence. We are able to provide some limited quantification on institutions, but they even "softer" than proxies of economic activity, hence conclusions on institutional quality are more tentative.

The rest of the paper is structured as follows. Section II reviews briefly the traditional literature on Ragusa/Dubrovnik and derives from it a number of common hypotheses for potential quantitative testing. Section III focuses on the story of long-term economic evolution and success; it starts with a reclassification of historical periods based not on diplomatic events but on economic phases, then goes on to test five hypothesis on economic success with the data set created. Section IV turns to the quality of institutions using currently popular concepts, and undertakes limited quantitative testing of relevant hypotheses for three areas: financial prudence; ease of doing business, and effective Rule-of-Law. Section V summarises the findings and points to areas of further research.

Two clarifications are in order. First, we generally use the Latin name Ragusa, as Dubrovnik was then known. Second, we do not claim Ragusa was the only example of a prosperous city state with sensible policies, indeed we accept the view of some scholars that a lot of Ragusa’s wise policy was an emulation of—with perhaps improvement upon—those of its main rival and overlord Venice.

II REVIEW OF RAGUSA’S HISTORY 1100-1800

The historical literature on Ragusa exhibits a considerable consensus that despite its small size and limited natural resources, it was one of the most successful states in the eastern Mediterranean, with volumes of shipping, trade, level of wealth, architectural and cultural achievements, disproportionate to its size. Innumerable authors over the centuries have attributed its success to effective governance based on a political regime of republicanism that may not have been democratic but relatively fair and benevolent providing pioneering social provisions like education, health care, quarantine systems, and provision of grain reserves for times of shortage. To this was coupled a generally liberal, open economy, with prudent state finances, limited market intervention, and encouragement of private enterprise. The Croatian economic historian Vladimir Stipetic (2000, p.24): captures this nicely in a recent article “Dubrovnik traded like Hong Kong, Singapore, Taiwan …but did so some five hundred years before …[and like these
countries] became prosperous . . . because of their adopted economic policy. This characterization suggests the label of the “Adriatic Tiger” of yesteryear, an early example of a small open economy with strong fundamentals and outward orientation.

The voluminous literature on Ragusa is almost entirely the work of historians, and generally contains little statistics, most interpretations based on written evidence in archival works or contemporaneous writers. When data are shown they are fragmentary, illustrative, lack long-term continuity, rarely in tables or charts. We have culled statistics from the literature, systematized them as much as possible, and used them to analyze this important historical case. Several recent works by Croatian scholars do use a quantitative approach, with careful data collection, sorting out unreliable estimates, and presenting the most solid ones to complement qualitative analysis. The earliest is the time-series population estimate in Vekaric (1998), then a partial but careful and very useful estimate of GDP in Croatia 1500-1900 by Stipetic (2004), and Zlatar’s (2007) analysis of private credits in 16th-17th century. Some use of data on legal institutions can also be found in Ravanic (2010), and in several studies by Lonza (1997), (2002); the later quantifies court procedures in a way broadly analogous to indicators of the World Bank’s Doing Business Reports. Lonza’s numbers and others culled by fragments in various works, will be used in Section IV.

This paper adds to such research; using data from some of the above works, and adding a large amount of new data we are able to create time-series estimates for about the period 1300-1800, allowing longer-term analysis of Ragusa’s evolution. Data on shipping-fleet numbers, carrying capacity, are particularly important for this, as they have a high correlation with both population and GDP for later years, but are available much farther back. 6 We turn now to a review of the historical literature.

II (i) Timeline of Historical-Political Development

The first “records [of] Dubrovnik’s arsenals (shipyards) date from the year 782,”7 which is broadly consistent with the consensus that Ragusa was founded as a significant settlement by the 7th century, allegedly by Greek-Italian denizens fleeing from the 639 Avar invasions of Epidaurus (Cavtat). As for all early history, there is a mixture of myth and fact, which Carter (1972), and Stuard (1992). inter alia try to sort out But even the assessment noted in Wikipedia that “from the 11th century Ragusa emerged as an important maritime and mercantile city”, 8 is a view widely shared by contemporary and modern writers. In 1153 Andalusian geographer Idrisi wrote: “Ragusa was a large maritime town whose population were hard-working craftsmen and possessed a large fleet which traveled to different parts.” (Carter, 1972, p.74). In 1553 .Giustinani noted its nobles had fortunes far in excess of other Dalmatian cities, and comparable to the

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6 The correlation values of ship tonnage for 1500-1800, are: 0.536 with GDP and 0.884 with Population, as calculated in Havrylyshyn and Srzentic (2012)
7 Nicetic (2002, p.11)
Venetian elite, with “many individuals having [wealth] of 100,000 ducats and more”. Stuard (1981, p.808) notes Shakespeare’s term Argosy in *Merchant of Venice* incorrectly implies these were Venetian ships, but other English writers of the time explicitly noted its greatness, as Pepys in his *Diary: 1660-69*: “a small country, but it is said older than Venice”. The renowned 20th century economic historian of capitalist development, Fernand Braudel, labeled Ragusa “the Jewel of the Adriatic”.

While some historians claim for Ragusa a uniqueness as an independent Republic with relatively democratic procedures and more benevolent attitudes to commoners in the region, in fact, *de jure* it was usually in a suzerainty, tributary, or protectorate status under one or another of the larger powers—but *de facto* it was certainly quite autonomous in its internal governance and external commerce for the better part of a millennium, justifying its motto *LIBERTAS*. Just how much more democratic and benevolent it was is debatable, and we address this to some extent in Section IV; here we briefly summarise the main phases of its history. Historians vary somewhat in classifying the periodicity in Ragusa’s existence as a Republic, but a broad consensus gives the following periods.

• **The Byzantine period about 8th/9th century to 1204**: Ragusa was mostly under Constantinople’s suzerainty, with periods of submission to Venice, Hungarian kings, Normans in Naples, and even some years of independence. But it enjoyed considerable autonomy and enough neutrality to have trading rights with all sides.

• **The Venetian period, 1204 to 1358**: Ragusa accepts formal submission to Venice, a Republic at least 10 times larger, and a far more powerful naval fleet. Venetian Counts formally were heads of state, tribute was paid and in war it contributed one vessel per thirty Venetian ones. In return it retained internal autonomy and importantly was allowed the valuable privilege of trade intermediation between the Balkans and Venice. Paradoxically during this period Ragusa became a significant rival of Venice in Mediterranean trade.

• **Hungarian suzerainty, 1358-1526**: Ragusa falls under dependency of Ludovik I after he drives Venetians from most of the Dalmatian coast. In the middle of the 14th century, under the 1358 Treaty of Zadar, But the Hungarian kings were content with inland superiority over Venice and not interested in Mediterranean trade, allowing full trading rights to Ragusa.

• **The Ottoman period: 1526-1684** brought a new protectorate status under The Porte after the Hungarian defeat at Mohacs. But under the loose control of Hungary, formal relations with the Ottomans began much earlier. The first treaty was in 1392, with expansion of its terms in 1397 to fully free-trade in Ottoman regions, and yet another treaty in 1459 after Turkish occupation of Serbia.

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9 Krekic (1997, p.193) Well-paid sailors could earn a few hundred ducats yearly, captains 3-4 times.
11 Havrylyshyn and Smirnic (2012) discuss these claims.
12 Kuncerpic (2010) elaborates on the reality and myth of *LIBERTAS*.
well-remembered defeat of Serb forces at Kosovo Polje in 1389, and Ottoman’s
crowning achievement with the fall of Constantinople in 1453, clearly signaled the
need of Ragusa to deal directly with the Porte despite its formal dependency on
Hungary

• The Austrian period, 1684-1806 was a faint echo of the earlier periods. Ragusa
retained considerable autonomy particularly for Balkan trade, however diplomacy
was decreasingly effective as Ragusa’s economic strength had been sapped by
the overall economic decline of the eastern Mediterranean. Some interpretations
suggest Austrians did not seek firmer authority over Ragusa (now mostly called
Dubrovnik) because its relative commercial importance was much reduced.\(^{13}\),

• French occupation in 1806 ends independence of Dubrovnik, not just \textit{de facto}, but
\textit{de jure}. During the Austrian-French wars too weak to use its earlier diplomatic
efforts to retain neutrality, it surrendered to overwhelming French forces and lost
Republic status. With Napoleon’s defeat the 1815 Congress of Vienna returned
Austrian control over Dalmatia, but not Dubrovnik’s city-state privileges\(^ {14}\). By 1900
railroads had further undermined Dubrovnik’s advantages. It became part the
South-Slav Kingdom in 1918 as a much reduced maritime power, though
increasingly an important tourist destination, designated as a UNESCO World
Heritage site in 1979.

\(\text{II (ii) Common Hypotheses on Ragusean Economic Prosperity}\)

While the literature is virtually unanimous that Ragusa was extremely prosperous
despite its very small size and poor resource base, authors vary somewhat on the
question of the when, how, and why of this success. From such traditional discussions
we derive a number of common economic hypotheses (HH), then use our new data-
set to test them\(^ {15}\). The first five are related to economic evolution—or WHAT happened—and will be analysed in this section. The other five concern the “good institutions” that
historians note as the explanation for Ragusa’s economic success—or WHY it
happened.; these are taken up in Section IV.

\begin{itemize}
  \item HH1: The Golden Years of prosperity were about 1350-1550.
\end{itemize}

\(^ {13}\) “Relative” is the operative word here: In Sec III we show data suggesting absolute level of economic activity might have been still very large.

\(^ {14}\) This lends truth to the assertion by Luetic (1969, p107): “the French occupation…overthrew the 1,000 year historical thread of Dubrovnik’s sea-based livelihood, and destroyed
the significance of Dubrovnik as a world-class maritime power.”

\(^ {15}\) The statements for each of these hypotheses are not to be found so explicitly in any earlier studies, but are our own interpretation of the consensus, or in some cases like HH2 our proposal to add a new nuance to the historical writings.
• HH2: The preceding Silver Period was economically also very dynamic\textsuperscript{16},

• HH3: The carrying capacity for population was very limited, well under 100,000,

• HH4: The commercial fleet of Ragusa at its peak equaled that of Venice, and exceeded that of England. (we call this the “patriotic hypothesis”)

• HH5: Ragusa’s decline began with the discovery of The Cape of Good Hope route in the early 16\textsuperscript{th} century.

HYPOTHESES ON WHY IT HAPPENED

• HH6: The State conducted very prudent and conservative financial policies, avoided budget deficits, debts, inflationary debasement

• HH7: State laws, regulations, institutions were favorable to commercial activity

• HH8: Rule-of-Law was established early and effectively and fairly implemented

• HH9: Enlightened social policies provided for basic needs of the entire populace

• HH10: Ragusa had very low military-naval expenditures, relying on diplomacy for its achievements.

III TESTING COMMON HYPOTHESES ON ECONOMIC EVOLUTION

Virtually all histories of Ragusa are structured on historical political models, with period classifications as above dependent on key events: wars, victories, treaties, regime changes. Given this paper’s focus on economic evolution we propose a classification based on the nature of the economic development shown in Table 1 with approximate dates.\textsuperscript{17} For all but the last of these periods we test the five “what happened “ hypotheses using quantitative indicators as available, and complementing the analysis with other fragmentary statistics or qualitative assessments from the literature.

But first consider as a broad overview an indicator which may differentiate the relative economic dynamism of each period. A chart in Carter (1972) listing the major monumental buildings in the city from the 9\textsuperscript{th} century to 1877 is used to create Figure 1, showing for each period the absolute numbers, the share of the total, and a crude index of building intensity (=number of buildings per 100 years)\textsuperscript{18}.

\textsuperscript{16} In fact most historians do not give special importance to this period, with possible exception of Stuard (1975,1992); we take the liberty to make it a more explicit hypothesis than she does in her many works on this period.

\textsuperscript{17} The rationale is explained in Havrylyshyn and Srzentic (2012)

\textsuperscript{18} This may underestimate the number in later periods since it shows only buildings within the city walls, and territorial expansion over time likely meant more major building projects outside as well.
### TABLE 1. CLASSIFICATION OF ECONOMIC PERIODS

<table>
<thead>
<tr>
<th>Economic period</th>
<th>Year</th>
<th>Nature of Economic Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundational Period</td>
<td>To 1100</td>
<td>subsistence agric, fishing, short-distance maritime trade</td>
</tr>
<tr>
<td>Silver Period</td>
<td>1100-1350</td>
<td>above +: hinterland trade esp. Balkan silver, other minerals, + Adriatic entrepot trade</td>
</tr>
<tr>
<td>Golden Years</td>
<td>1350-1575</td>
<td>above + increasing long-distance Maritime trade mostly to Levant</td>
</tr>
<tr>
<td>Cape Hope, Gradual Decline</td>
<td>1575-1750</td>
<td>Levant trade gradually lost to W. Europe competitors, efforts to trade in West Med. &amp; Atlantic</td>
</tr>
<tr>
<td>Revival Interlude</td>
<td>1750-1806</td>
<td>Balkan trade continues, hire-out ships, sailors to new big powers</td>
</tr>
<tr>
<td>Post-Independence</td>
<td>1806-1900</td>
<td>decline sharpens, maritime activity Undermined by railroads; late-19th.c beginning of tourism-economy</td>
</tr>
</tbody>
</table>

Source: Authors’ classification

Taking this at face value – the numbers already provide a test of HH1 that the Golden Years 1350-1575 were indeed the most prosperous, with the largest number of buildings, the highest share by period and the highest per century intensity. The foundational period shows a start but still very modest. However, perhaps most interesting in this chart is how large a share of the major structures were put in place in the Silver period, with an intensity of building far greater than the late periods and second only to the Golden Years.

Figure 1: Principal buildings in Ragusa by period 9th-19th century
Most histories of “The Adriatic Jewel” justifiably focus on the late 14th to late 16th century as the period of greatest prosperity. We propose a new interpretation be added - the preceding Silver Period was economically also very dynamic. Some data we present is consistent with this, suggesting that the prosperity of the Golden Years came on top of a very strong buildup in the Silver period. The values in Figure 1 reflect the subsequent decline in the 17th and 18th century, with a far lower number of buildings, smaller share and intensity. There were none in the brief revival, and only a few more in the post-independence period. Consider now developments in each of the economic periods.

III (i) Foundational period - to 1100

There is a broad consensus that in its early years the economy was very simple, largely self-sufficient, based on fishing, some agriculture, building of small craft. This was nevertheless an important period in building the foundations of future prosperity and dominance in Dalmatia. One sees a gradual movement into nearby coastal entrepot trade, as well as intermediation between the Balkan hinterland and thriving Italian cities like Venice, Florence, Bari, Ancona. With the first shipyard already in 782 -within a century of its founding- Ragusa was clearly already moving beyond local fishing into maritime activities. Early documentary mention of its shipping prowess notes that in 783

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19 Several works of Stuard imply such a thesis—we suggest it be made explicit in the literature. Those who have studied the Industrial Revolution will recall the later partial revision of economic history showing that it was preceded and made possible by an earlier agricultural revolution and attendant growth.
Charlemagne hired Ragusean ships to transport Croatian and Serbian mercenaries across the Adriatic in his campaign to drive Saracens out of Apulia.\textsuperscript{20}

Another indicator of an early economic development was its ability to withstand for 15 months the 866 Saracen siege until Byzantine ships lifted it -indirect but strong evidence that: 1) Ragusa was worth seizing, and 2) defenses were already quite strong.

The literature contains numerous accounts of caravan trade between Balkans and Italy through Ragusa well before 1100. Resources like cattle, leather, wood/lumber, honey, wax came from the Balkans, to be traded for textiles, household goods, metal products, and various luxuries from Italy. The share of this Balkan-European trade in Ragusean economy varied in importance over time as the products changed, and in later periods maritime entrepot trade in the Adriatic, Mediterranean and with the Levant and elsewhere became far more important. However, throughout Ragusean history, the Balkan trade remained a significant component of its income.

\textit{III (ii) The “Silver” period (1100-1350)}

The 13\textsuperscript{th} century saw a boom in minerals trade as mines opened and expanded in hinterland (Srebenica, Novo Brdo, Rudnik). The main item was silver, but other minerals (gold, lead, iron, etc.) also played a role, as did salt exports. Stuard (1975-76, 1981, 1992) describes how Ragusa quickly became a principal conduit meeting the high demand for silver in Europe; Stipetic (2000, p.26) states Balkan silver production about 1400 was almost one-third of European totals, and of this almost one half (i.e. about 16\% of European total) was exported through Ragusa. He also contends that required sales to the Ragusa mint provided the basis for a considerable amount of seigniorage profits for the state treasury. The silver from hinterland was brought by caravans to Ragusa and then shipped for sale to Italian city states, Florence, Venice, Genova etc. The return voyages would bring textiles, luxury clothing for Balkan nobles, jewelry, glass, and other manufactures. This is most comprehensively analyzed by Stuard (1975-76). It is significant that the earlier Balkan trade in raw materials continued, though silver and other minerals proved much more profitable, providing a big boost to the Ragusa economy, including the local development of silver and goldsmithing.

The new hypothesis we proposed based on Stuard, \textit{(HH2) that the Silver Period was economically very dynamic} was already confirmed by Figure 1, but one can also see that data for area, shipping, and probably but unverifiably in population. (Figures 2, 4) is also consistent with the hypothesis.

\textsuperscript{20}Carter (1972, p.53), based on writings of the Byzantine Porphyrogenites though Carter warns in many places such early writings probably had many confusions.

\textsuperscript{21} Often the location names define the mineral: e.g. Srebenica for silver, Olovo for lead, but Rudnik simply mine.
An important development in this period was the recognition of Ragusean merchants, elites governing authorities that greater benefit would come from Balkan-Italian trade not only with land caravans, but also transporting the goods in both directions by Ragusean ships. Already in the 14th century one finds discussion of a burgeoning maritime trade rivalry with Venice, Ragusa’s nominal suzerain; a rivalry that we show increases substantially in the next period. There appears to be already a big jump in the commercial fleet size, with a probable doubling from about 22 long-distance ships in 1300 to 40 by 1325 (Figs. 3).

The same trend is also evident in Fig. 4 on Tonnage, as is the indication that merchant fleet, while lower than that of Venice was not far behind. Such indicators further support the proposition that the Silver Period saw a significant buildup of the strengths that led to the prosperity of the Golden Years.

III (iii) The “Golden Years” of maritime prosperity (1350-1575)

This period is almost universally recognized by scholars as the apogee of Ragusean economic prosperity. The Republic’s population reaches its maximum in 1500 of about 90,000 (Figure 2), as does per capita GDP (Figure 3)-though we raise some doubts about this later. The fleet size grows sharply (Figure 4, from the 40 noted in 1325 to 200 by 1575, and tonnage even more substantially (Figure 5), with average ship size seeing a sharp increase. All these confirm HH1: the golden years of maritime prosperity came about 1350-1550/75. We use 1575 as the end-date based on the peak value of shipping tonnage.

On population, Vekaric (1998) argues much of the expansion prior to 1500 was due to Balkan-Slavic refugees fleeing advance of Ottomans. However, economic attraction also played a role: there is little doubt the level, of per capita income in Ragusa was well above that of the immediate Croatian hinterland (Figure 3). A more intriguing hypothesis stated in Vekaric (1998) concerns the strong decline from 1500 notwithstanding the strong growth of shipping activity. He attributes some of this to renewed episodes of the plague, but also to the “correction” of the earlier refugee boom, arguing that the peak population was far beyond the very infertile territory’s carrying capacity and was unsustainable. If indeed shipping activity is taken as a good proxy for otherwise unavailable economic activity data, one must tentatively conclude that Ragusa’s aggregate GDP continued to grow, and population decline cannot be attributed to economic decline. Subject to further analysis, it follows the Vekaric explanation for population decline is the only logical one. Hence, we tentatively confirm HH3 that the carrying capacity for population was very limited, well under 100,000. It would

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22 These figures are less certain than for later periods (hence a dashed-line in Figures 3& 4), and no reliable estimates are available for earlier years, but the trend and dynamism seems clear. Table 3 in the Data Appendix elaborates.

23 Luetic (1969), S. Vekaric (1954), and Nicetic (2002) all emphasize the constant expansion of capacity over this period.
seem useful for future research to ask how this decline occurred: was it emigration, and if so to where? was it non-replacement by immigration of natural (or plague) mortality?

Figure 2: Population and area: Ragusa 1300-1800

Source: Appendix tables in Havrylyshyn, O. and N. Srzentic. “Economy of Ragusa, 1300-1800 The Tiger of Mediaeval Mediterranean”, 2012

Figure 3: GDP per capita Ragusa and comparators (in 1990 USD)

Source: As for Figure 2

Figure 4: Number of ships: Ragusa and Venice 1300-1800
The new, additional basis of prosperity in this period now becomes maritime trade intermediation, not only throughout the Adriatic but increasingly with the Levant territories under Ottoman rule bringing goods from the Far East such as spices, silk, oriental perfumes, grains, and other raw materials. But the commodity structure of trade with the Balkans continued to be quite similar to that in earlier periods and there is little doubt that the strong preceding experience and the extensive slavicization of Ragusa/Dubrovnik, provided a critical comparative advantage. It is a tribute to the governing elites of Ragusa - both nobility and merchants - that early on they leveraged their economy on this comparative advantage which provided the capital, skills and experience to capture so much new maritime trade in the 15th and 16th centuries. Thus the economy in this period was based largely on entrepot trade services including shipping profits and value of the direct and indirect labor services. One also begins to see Ragusean sailors and officers hiring out to foreign powers - though this becomes much more important in the decline period. Thus Lane (1973, p.425) notes that as Venetian dominance declines in 18th century “shipmasters were no longer Venetian … [but] mostly Dalmatians with Slavic names”.

Source: As for Figure 2
That domestic production probably accounted for a quite small portion of value-added cannot be verified quantitatively – even for England and western Europe GDP estimates only go back to late 18th century – but the qualitative analysis make clear this was so. Apart from very small amounts of grains (at best one-third of needs according to Carter and others) some wine, olive oil and market garden products, salt exports, there were but a few manufacturing activities. The only important ones were ship-building, gold and silver-smithing, with jewelry exports to Balkans increasingly coming from domestic production not just imports from Italy. Shipbuilding had always been largely local (recall reference to first arsenal in 792) but in this period it becomes very significant and includes sales outside Ragusa, based on the reputation of high-quality that many contemporaneous writers noted.\(^{24}\)

This was the period in which Ragusa became, as a prominent American historian of Venice, Lane (1973, p.379, p.381) notes “Venice’s most damaging competitor...bidding cargoes away from the Venetians on all seas, even in the Adriatic...[as] their ships were increasing in number and size”\(^{25}\). Other accolades include claims of Ragusean equality with Venice, based on fleet size and tonnage about 1575 (Figures 4 and 5). As Figure 6 shows, at this time the English fleet was still only about the same size\(^{26}\).

\(^{24}\) Havrylyshyn and Srzentic (2012) cite numerous such references.

\(^{25}\) This is also reflected in the work of Fernand Braudel who writes of Ragusa’s ability to “snatch away goods from under the eyes of Venetian merchants” as cited in Stuard (1992).

\(^{26}\) Some historians claim before mid 16th century Ragusa’s fleet exceeded that of England; we were unable to find hard evidence before 1575.
However, the “patriotic” hypothesis of equivalence with Venice is perhaps exaggerated, for over these centuries, equivalence only occurred when Venice had lost numerous ships during wars. It is clear in the figures the Venetian fleet had far larger numbers in the 14th century, falling sharply with the many wars with Genoa. Both in defeat and victory, many ships were destroyed, then the fleet was rebuilt to even higher levels about 1425 (over 300 ships), then once again declined as many wars -now with the Ottomans- again decimated the fleet. Ragusa’s neutrality and Ottoman privileges spared its fleet, so that at its peak in 1575 with about 200 ships and peak historical capacity of 33,000 tons it was technically “equal” to Venice -as was also true about 1400.

Of course, to affirm that over the long-term Ragusa did not quite “equal” Venice should not be a surprise or a negative commentary: Given its much smaller size and territory, with poor fertility, the fact that Ragusa “La Città Felice” could be put in same league as “La Serenissima” is already a strongly positive characterization.27

III (iv) Vasco da Gama rounds Cape of Good Hope, Ragusa (gradually) declines (1575-1750)

Historians almost universally agree the peak of Ragusa’s importance was about 1550, then began a decline due to the shift of economic dynamism to Western Europe, and the related opening of the Cape of Good Hope eastern route. The decline is reflected in values for population (Figure 2), GDP and GDPpc (Figure 3), number and tonnage of ships (Figures 4 and 5). The Italian city-states also declined; for Venice, Lane (1973, p.384-6) refers to the “The Collapse”. However, our data suggest this decline was not so immediate. After Vasco da Gama established a colony in India in 1503 and the first spices are brought to Europe by Portuguese ships in 1506, Ragusean shipping capacity continues to expand until at least 1575. This long period of continued competitiveness hints at another hypothesis common in modern studies of global shocks: that small, open, and institutionally flexible economies have great resilience, and are bet at mitigating external demand shocks.

Figure 6: Ship capacity (in 000 tons): Ragusa, Venice, Netherlands and England

1375-1800

27 Arguably, the lack of a large and fertile hinterland should not matter, as resources can be imported. But in mediaeval period this with many famine episodes, states often forbade food exports; with long travel times, size mattered. Larger size also provided a labor force: sailors, soldiers, chandlers. Venice was in this sense far better endowed than Dubrovnik.
The enormous growth of Western European naval powers (Portugal, Spain, then Netherlands, England) is particularly clear in Figure 6. While in 1575 England’s fleet tonnage was about the same as in Venice and Ragusa, and that of the Netherlands a “merely” 3-4 times larger, after 1600 both of these move into exponential growth, with both Adriatic cities falling far behind. This creates an eventually unbeatable competitive force for Ragusa unlike the earlier rivalry with Venice which it was able to outcompete because of advantages in Slavic lands and skillful diplomacy with the Porte and the Pope.

The new competition was unbeatable for two reasons. Western European markets for which Balkan resources are insignificant, soon surpass those of Italy. Ragusean authorities and merchants undertook efforts to move into these markets, with some success for a few decades, but not enough to prevent an eventual decline. Second, even with the privileges granted by the Porte, for eastern trade via the Levant, this becomes far too costly compared to the new sea route around the Cape. Again, Raguseans made efforts to compensate, by providing shipping services to western powers, (ships were re-based, at first mostly to Spain) and perhaps most important individuals hired themselves out to the new western fleets –maybe the first significant episode of Dalmatian’s famous quest of “truhom za kruhom” (loosely translated as following your stomach in a quest for bread). In addition some attempts were made to engage in trans-Atlantic trade, but again with limited success. All this helped mitigate the decline, but in the end was not enough to keep the glory-days alive. Thus preliminary tests confirm HH5 that the rounding of Cape of Good Hope did not immediately lead to Ragusa’s decline, though with a long lag it was the key factor. One could argue further the diversification efforts succeeded in delaying the decline, and giving

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28 Several articles in Filipovic and Partridge (1977) discuss this, including: Luetic, Filipovic and Zivojinovic
continued growth almost a century after Vasco de Gama, which in a limited way is consistent with the resilience hypothesis.

Much of the preceding analysis is based on shipping tonnage data (Figure 5) which is noted appears to be the best available proxy for economic activity. One sees indeed a slight decline from 1475 (29 tons) to 1550 (24 tons), but a strong rebound to its peak value in 1575 (53 tons), after which it declines quickly. Note the same trend is seen for Venice, which also suffered from these two new competitive factors. Carter (1972, p.352-3) summarizes earlier arguments of Libyer and Lane for Venice and Marinkovic for Ragusa: “trade of Dubrovnik and Venice was not halted at the Levantine ports…but was carried by merchants of these Republics as far as Goa and possibly even Malaca and Batavia at a period when Portugal was supposed to have a ‘monopoly’ of the spice trade.” Thus, the efforts by Raguseans (and Venetians)—e.g. establishing a trading colony in Goa, diplomatic efforts with the Ottomans to maintain the sole rights of spice trade in Alexandria—succeeded for some time.

**III (v) The short revival period (1750-1806)**

After the decline from 1575-1750, a short revival occurred, not in population, but in the size of the fleet (Figure 4), though the average capacity probably fell. This revival does not seem to be given much attention by historians, either because it is not clearly understood, or perhaps because by this time the uniqueness of Ragusa/Dubrovnik has long passed and academic interest in the later periods is not as great.

The analysis in this section has allowed some testing of the common hypotheses, or interpretations, of the traditional historical literature on Ragusa/Dubrovnik. But unsurprisingly, inevitable imperfections and non-availability of data leaves a number of unresolved issues. We note as possible topics for future research two puzzles.

First, since tonnage continues to rise until 1575, indicating economic expansion, while population declines, this may indeed have been as Vekaric(1998) argues due to a limited carrying capacity. However, it is then useful to investigate where the population went to: emigration, unreplaced mortality, plague? Related to that is a question of how was the peak of 90,000 in 1500 sustained? Conceivably by imports paid by growing wealth, also possibly by refugees temporarily populating infertile rural regions but living at the margin. A second puzzle concerns the decline of GDP per capita from about 1600. That aggregate GDP would fall in the decline period is understandable—but as population declined sharply, could it be per capita income did not? This is even more of a puzzle for the revival period where, as population continues to decline there

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Laetic (1969 m) and other fleet estimates generally agree on this.
occurs a sharp revival of tonnage about 1775-1800 to levels nearing the peak of 1575; why is this not reflected in a revival of per capita income but continues to fall?  

IV ASSESSING THE QUALITY OF INSTITUTIONS

IV (i) Overview: Ragusa’s Main Institutional Strengths

Our quantitative hypothesis tests above have broadly confirm wed the strong consensus in the historical literature that Ragusa was indeed economically very successful in these centuries. Despite its small size and limited natural resources even for basic staples, it rivaled or at least approached the prosperity of much larger Italian city-states like Venice, Florence, Bari, Ancona. This is manifested in measures of the wealth of its elite, the apparent wide extent of its trading activities, and is confirmed by data on the size of its shipping fleet (Figures 5&6), until 1600 being in the same league as top maritime powers like Venice, England and Netherlands. While on this there is little dispute in the literature, what makes the history more interesting is differences about what explains its success, the various answers to the central question: **how could such a tiny entity do so well?** The book of Carter (72-p. 550) is typical of historians efforts in its aim to show “how a small republic with few natural advantages could grow and develop mainly through her function as a trade and political intermediary between the underdeveloped regions of the Balkans and Levant, and the more developed regions of western Europe.”

Reflecting the main categories of explanations given, we rephrase the question as follows: **was Ragusa’s economic success due to luck of location, naval power to control commerce, or wise policies?** This section will attempt to show that while luck may have played some role in very early years, naval power was not a large factor—certainly far less important than it was for major entities like Venice, England, France, Spain, Netherlands—and that the main differentiating factor was wise policies, that is good governance, favorable institutions, skillful diplomacy. As in Sec. III, we will rely on both qualitative evidence, and add to that a certain amount of data on the quality of institutions. Unsurprisingly such data is even softer than the proxies for economic activity used above, but this should be put in context. Even current measures of institutional quality must be put in the “soft” category, much of it being based on expert opinion rankings rather than any natural metric. If anything it is surprising that we were able to cull even as much indirect data proxies for institutions as we have—and

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30 Stipetic (2004) shows a modest increase 1550-1575, then a decline. But later values in Figure 2 are based on the vaguer estimates: he gives only values for all of Dalmatia, we assume earlier proportions—which may be incorrect.

31 Kaufmann and Kraay (2003.) provides a good review of institutional data problems today, as well as the important argument that subjective rankings of experts may sometimes better capture effectiveness of institutions (e.g. degree of corruption) than formal measures. (e.g. existence of anti-corruption laws or committee is not as meaningful as the opinions of business people about extent of corruption.)
this just from secondary literature without fresh archival research.. Nevertheless the findings below must be considered more tentative than those of Sec. III.

We have grouped the many different reasons given in the literature into the following main themes:

- Luck of location
- Openness and secularism
- Good governance including sufficient representation of interests of all elements of population to achieve political stability, and further, provision of and investment in physical infrastructure (roads, water supply, sanitation, weights and measures regulations etc.)
- Prudent fiscal and monetary policies, a relatively stable currency
- A good “business climate” —akin to the modern notion underlying the now-well-known Annual Reports of the World Bank on the “Ease of Doing Business Rankings” (EDB)
- Effective and fair “Rule-of-Law (ROL) - commercial ROL being also part of EDB
- A “sufficiently fair” social policy: to ensure social stability and reliable labour force; the ruling nobility avoided oppression and provided various benefits for the wider populace, including public health measures, safety regulations for housing, fire, sanitation, provision of food reserves for periods of regional famine, and social infrastructure like hospitals, pharmacies, and schools.
- Minimal military expenditures with maximum diplomacy aimed at maintaining Ragusean “LIBERTAS” and thus keeping open trading channels

We give the most emphasis to fiscal prudence (IV.ii), favorable commercial climate or EDB(IV.iii), effective ROL (IV.iv), A “fair” social policy (IV.v), and the trade-off between military expenditures and diplomacy (IV.vi). But before turning to the details of these factors, consider briefly the issues of location, openness, and general governance.

**Location**

Many historians emphasize Ragusa’s location at the edge of the Christian and Muslim worlds, noting that by sea it was close to thriving Italian cities and kingdoms, but by land immediately adjacent to Balkan lands occupied by the Ottomans starting in the 14th century. Carter (72, p.135) reviews but disagrees with these arguments Miovic (2010) reviewing the 1440 book on Ragusa by Filip de Diversis points to the chapter “De bono situ Ragusii” (The Good Location of Ragusa) its politically favourable geographical location between Christian and Muslim world, on the edge of Balkan hinterland, also on the sea routes eastward, and its allegedly ample water resources. This last seems overstated given the clear evidence of huge efforts to provide water by viaduct from then-long distances to the Ombla River. But most historians even if they do usually note location as a factor, emphasize much more the other explanations noted above. This seems reasonable, as Ragusa was not the only possible intermediary on the Adriatic Coast, and had far poorer “natural” advantages in terms of productive
lands, easy water supplies. Indeed many coastal areas like Kotor or Ulcinj to the south, and Split, Zadar to the north had similar location, probably better natural resources, including even larger quiet harbors. All were also trade intermediators competing with but never attaining the prosperity of Ragusa. In sum, it is entirely logical to say that without the luck of such a location, Ragusa would not have prospered, but it prospered more than other Dalmatian sites due to other factors, primarily wiser policies to leverage the location into greater prosperity than local competitors. This may accord well with the view of Machiavelli (xxx, -translation 1996, p.8) who briefly points to Ragusa as an example of his thesis that the ideal site for a city: “it is better to choose sterile places for the building of cities so that men, constrained to be industrious and less seized by idleness, live more united, having less cause for discord, because of the poverty site, as happened in Ragusa.” In sum we would argue that location was at most a necessary, but far from a sufficient condition.

**Openness**

On the greater openness and secularism of Ragusa Stavrianos’ treatise on the Balkans (1966) underlines the anti-westernism of Balkan culture in the medieval period, noting “the one exception...Ragusa...[where] we find an entirely different civilization-secular, sophisticated, individualistic, and maintaining close ties with the West.” This is doubtless a fair characterization, but still falls short of an explanation of the greater openness and diversity of Ragusan society compared to the Balkan hinterland. First this begs the question Why was it more open and western-oriented than the hinterland? Further, Stavrianos does not explain why other coastal cities mentioned above, which were equally western-oriented and relatively urbane, remained economically less prosperous than Ragusa.

**General good governance**

If the World Bank’s Governance rankings were being done in the middle-ages, arguably, Ragusa would rate quite high. The now widely known concept of good institutions as an explanation of democratic and economic success, in fact has great relevance to understanding the prosperity of Ragusa. A typical assessment in the literature is that of Krekic (80), V, p.38:

[Dubrovnik]...remained always vulnerable to Ottoman occupation...This is why the government felt even the urge to resolve the daily problems and to improve the functioning of institutions. They knew that internal stability and economic prosperity were the only way to strengthen the international position of the city.

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32 De Diversis is far more colourful describing Ragusa’s openness and sophistication: “Raguseans, commoners and patricians, the sumptuous appearance of their wives, friars, government office-holders, domestics and servants, peasants from surrounding villages and their livestock, merchants from afar, Turks, Morlacs and pilgrims unroll before us. Hungarian Kings, archbishops, famous people...but also desperate individuals in search of their beloved ones, enslaved by the Turks.”
Using the modern-day jargon about good governance one can look at three components: voice (VO), -which we address immediately below - a favourable business-climate (EDB), and rule-of-law (ROL) which come in later sub-sections.

Ragusa was by no means a democracy , government roles being almost entirely in the hands of a hereditary nobility mythically based on the “original” settler families from Epidaurus, though in fact in early centuries many rich merchants and Balkan “nobles ‘ were often quietly “ennobled” in return for the benefits they could bring Ragusa.33 As in Venice, eventually the nobility for self-protection imposed a closure (as in the Venetian “Serrata”) so that after the 14th. c. movement by rich merchants into the nobility was rare—but that the latter had great indirect influence is made clear in the literature , for example in Krekic (1980), Ch. XIX , who characterizes the regime rather nicely albeit somewhat sardonically as a “government of the merchants , by the merchants, for the merchants.” This crucial orientation to promote commerce may not only explain the good institutions we discuss later , but also the relatively benevolent position towards commoners , whose “voice” was of course not manifested in voting rights, but by participation in government bureaucracy by some rich merchants and skilled professionals 34 and by the many social-policy efforts to support the wider population. It is widely agreed by historians contemporaneous and modern, that compared to most other states/nations in this period the nobility ruled with a relatively soft hand and even provided considerable support to meet the needs of the populace. Thus Grubisa (11) shows Ragusa was perhaps less open than the Florentine system of “democratic republicanism:” (and thereby more stable, he contends), but it was far more concerned that the basic needs of the populace were met, than was the case in most regimes of that period such as the very narrowly-based republicanism of Venice. The Ragusan political regime might thus be most appropriately characterized as a benevolent rather than a rapacious oligarchy.

Most importantly as we elaborate further ,the governing class generally meted out justice not arbitrarily in a feudal fashion, but on the basis of laws, legislation, judicial process,best symbolized by having a very early a constitution-like document –the 1272 “Liber Statutorum Civitas Ragusii” - codifying earlier laws and informal practices. While many shortcomings in practice are noted by historians , numerous instance of well-applied justice in the law in practice are also found in the literature.35 reflecting the nobility’s self-serving but “reasonable” treatment of the lower-classes. . .Slsak (10) typifies the literature’s consensus when he argues this rule-based governance of the populace helped contribute to the long-term stability of the Republic, with virtually no

33 Vekaric (11) , Vol.1 shows in Table 7the roots of the noble families; it is clear that a large proportion were not from Epidaurus. Illustratively, and indicatively of name roots is the case of one of the most powerful, the Sorgo (Sorgocevic). They were rich merchants from Cattaro in Albania, “rewarded by the Grand Council for bringing large amounts of sorghum and other victuals to Ragusa, at the time of the great shortages in the year 1292” (see p.68 for Italina original text.)
34 Many writers note that in very early years before about 1200, in fact “Agora democracy” did exist with assemblies of all citizens (The Laudo Populii)-making key decisions. E.g. Carter 972-p.500)
35 We note on example using a quantitative review of 2,440 court cases, Lonza(02). She concludes large numbers of cases were settled out of court, a practice authorities encouraged.
significant peasant uprisings as seen frequently elsewhere, and far fewer internecine revolts within the elite.\footnote{The failed efforts of a revolt about 1402 and the short-lived and futile one by Lastovo island nobles being two major exceptions.}

For some historians even the extensive investments using Ragusan state finances to build churches and monasteries, was also a sign of good governance, and certainly in an age where this mattered much more, it could well have contributed to social stability. Marinkovic (07) details many such projects and emphasizes a point relevant to this paper: the hagiography, or naming of these churches followed “a strategy of spreading the cults of the city patron saints from the implicit demarcation (defence) towards a more symbolic sign of governing (control) reflects a tendency towards a more finely structured Ragusan government.”

The legitimacy of the nobility was to a large extent a myth but the other side of this coin was that it was not nearly as rigid in practice as in the law. Vekaric (11) and earlier others –Krekic (several works) Kedar (76), Carter(72)- document the shifts of noble lineage, the impoverishment of many noble families, and the rapid growth of wealth of non-noble merchants who were gradually and volens-nolens “absorbed” into the upper classes, the ruling elites, government officiaaldom. One quantitative indicator of informal upward mobility is the increase over time in the share of credit issued by commoners. Thus,\textsuperscript{36} Krekic\textsuperscript{(80)}estimates for the years 1280-1440 this was about one third, while Zlatar\textsuperscript{(07-p.139)} gives a value of 42\%. An imperfect but striking statistic suggesting continued upward mobility is in Luetic\textsuperscript{(61-p.101)}, stating that by the mid-18\textsuperscript{th} century, of 380 registered ship-owners, only 80 were of noble class.\textsuperscript{37} Indeed it is from the non-noble ship owners category that perhaps “the richest man in Dubrovnik “ in the 16\textsuperscript{th} c. arose according to Tadic (1948, p.143).Miho Pracatovic from the island of Lopud is recognized by most historians for his very great wealth but even more, as Krekic (1997, Ch.I, p.p.253-255) for his tremendous informal influence, symbolized by the fact that a monument to him was erected in the “sanctum sanctorum” of the nobility, the courtyard of the Sponza Palace. Another ship-captain from the island of Sipan, Stjepovic-Skocibuha is considered in the same category. While Krekic dismisses as unlikely the story that he was offered admittance to the nobility but refused it, this deserves further consideration: Krekic is among the moist ardent on the problem of nobles falling into poverty, of nobles doing their “duty” assiduously by serving in government, as consuls, judges, officials.-yet does not make the connection that the latter caused the former. If so, then rich merchants would surely be wise enough to think twice whether nobility was worth more than wealth and the “eminence grise “ influence it permitted. That upward mobility existed seems widely agreed; we emphasize further that it is also relevant to the arguments in IV.iii that there existed a good business climate.

\textsuperscript{36} The failed efforts of a revolt about 1402 and the short-lived and futile one by Lastovo island nobles being two major exceptions.

\textsuperscript{37} This is not the actual share of the value just the number of people, hence it may overstate the role of commoners. In the Zlatar data, the size of holdings was higher for nobles; we have not found evidence for later years.
IV (ii) Evidence on fiscal prudence

Consensus in the literature is strong that Ragusa practiced a very prudent policy with respect to state finances, minting and debasement of currency, and market-encouraging regulations. Solid statistical evidence under this rubric in the secondary literature is available for only one very late period, about 1800, but not for the most relevant years. It does nevertheless provide evidence supporting Hypothesis 6, concerning fiscal and financial prudence, though one must ask about its representativeness. This was a period well into the post-1600 decline so there is no automatic reason to think it representative. But arguably, such a period of difficulties would more likely lead to deficits and indebtedness—the evidence of Figure 8 shows exactly the opposite as we will explain. Furthermore one can easily buttress the argument by pointing to considerable qualitative evidence in the literature of financial prudence in earlier centuries.

Consider the relatively hard data in the extant set of complete budget numbers in the literature, taken from Bjelovucic (70.p44-45), which itself is based on a contemporaneous treatise the “Bara Bettera Memoirs”. The reliability is somewhat uncertain as the author does not specify for which year this is and seems to have made a transcription error, with the sum of expenditures exceeding by 30% (sic!) the total shown. The data (see Tab.A7 for raw values) is certainly strongly consistent with the fiscal prudence hypothesis, first in the fact of a surplus equal to about 10% of revenues, and second in the percentage allocation of its components as shown in Figure 8. Contemporaneous writers like Diversis and Kotruljevic, first noted the sensible financial stance of the Republic; recently Stipetic (00-p26ff) notes that “precise books were kept on the finances [of the state]” adding that prudence was ensured by “requiring the main officials in charge —registrars, clerks and accountants...must be foreigners;” [In addition] there was the institution of auditor with power of supervision of communal goods, a duty to investigate whether revenues are collected fully and expenditures are viable, not spent for unintended purposes.” They served five years when new ones were elected... Stipetic recognizes that the system was not perfect, indeed that building barns with doors implies horses do run out, that is corruption does occur. Krekic (97-p.32-5) notes the reality of bribery, but concludes that efforts to curtail it by punishing offenders were generally as effective as can be expected.

38 There is reason to accept the total, but question one item as hugely overstated: 66,000 Turkish piastres for missions to Pasha of Bosnia when the tribute to Istanbul and related costs was 48,320. We deduct from the former the amount of the excess in the sum, and calculate percentages as shown. Alternatively ignoring the summing error and taking% of component values, does not materially change the conclusions, only making the shares for diplomacy even higher.
The popular work of Reinhart and Rogoff *This Time it’s Different* (2009) meant in fact to remind us that the current recession is NOT that different from earlier ones over centuries—points to the fact that high debts and defaults were very common in European economies historically. In contrast, the historical literature on Ragusa we have researched so far does not give any specific instances of government debt defaults, and Fig.8 supports this view. In Dubrovnik about 1800, interest on loans was a mere 1.7% of expenditure. Perhaps equally important, it appears that all or most Government borrowing was domestic, either from the Zecca (the MINT) or the elites—in Fig.8 the loans were said to be from Ragusan Brotherhoods. In comparison recall Lane’s (73) estimate that at this time Venice paid out a third—and even more in earlier years—to service its debt. Kormer (95) analyzing about 25 kingdoms, principalities and city-states from 1500 to 1800 (not including Ragusa), concludes that “service on the debt varied between 17 and 36% of total expenditures.”

**Figure 7: Structure of Ragusa budget about 1800.**

![Figure 7: Structure of Ragusa budget about 1800.](image)

In fact Ragusa’s net asset position was strongly positive with large amounts of deposits held in Italian banks and by 18th century in Vienna. On the revenue side, the dividends on such deposits (by the state only) comprised an amazing 25.3%. Recall Figure 6, which, though fragmentary, also confirms Ragusans held considerable private deposits in the “Monti” or Funds: of Italian banks. But while formal defaults may not have occurred, it seems likely that some instances of payment difficulties arose. Krekic in his many writings, as well as others (Sisak(10) discussing the role and obligations of the nobility, note that in this small noble group, it was a “social obligation” that services be rendered to the state not only in the form of time in political and bureaucratic positions, consular activities, but also by “sharing” proportionately in lending to the state when
exigencies arise, or accepting less than full payment on previous loans. This is very much like the notion Reinhart and Rogoff (09) define as "forced loans.", and Cipolla (86) describes for Italian city-states of the time as "imprestiti." This does suggest, if not defaults at least instances of fiscal stress.

The role of trading activities in providing state revenues is also evident, though customs revenues at 9.3% were far less important than various taxes on shipping—on shipbuilding, on sales of ships, on navigation—totaling 30.2%. The low customs revenue is evidence of the high degree of openness. Financial prudence is further seen in the not inconsiderable revenues of 6.2% from "selling" consular services abroad to others: since there were consuls in many places with knowledge of many languages, they were expected to sell their services to anyone for a fee, keeping part for themselves.

We discuss below the balance of military and diplomatic efforts, but here Fig. 8 already presages confirmation of the common thesis that military expenditures were minimal (12.2%), while diplomatic costs were considerable—the first two categories, which add to a huge 42.8% of total expenditures.

Thus both the qualitative evidence on fiscal prudence in early centuries and the harder budget data of 1800 are very consistent with the hypothesis that Ragusan finances were generally strong, prudent, able to absorb shocks. Incidentally, Figure 8 gives numerical credence to the observation of Carter (72, p.535) about the enduring nature of this financial prudence—that even at the end, in 1806 after French occupation, "the state’s finances proved still to be in good condition in spite of all the troubles and the requisitions, and large sums were invested in Italian banks."

The literature gives a similar positive assessment of monetary and currency policy, low inflation and minimal metallic debasement, but so far we have been unable to find sufficient secondary data to confirm these views. Several writers note the "limited" devaluation of the Ragusan Grosso (Fig. 8a) and its minimal metallic debasement (Figure 8b), and infer from this low inflation and sensible monetary policy. Krekic (80-p.252-3) emphasizes the relative stability of the Ragusan grossi, with an annual devaluation of 0.31% over 220 years from 14th to 16th century. The grosso was more stable than most others, for example the Florentine lira. Carter (72-p. 566) shows the dinar’s silver content falling from 916.67 grams in 1337, to about one third that in 1600, while Cipolla (86-p. 59) shows a debasement from 1300 to one quarter of the silver content in 1600. But Venice was even better—as Bachrach (73-p77) notes, the "international currency par excellence ... was the Venetian gold ducat [which kept its 1284] weight and fineness remarkably intact up to the end of the Venetian Republic."

To sum up, a very broad consensus suggests that Ragusa practiced very sensible prudent finances, conservative minting activity, and apparently avoided excess credit expansion leading to eventual crisis. That excess credit crises occurred elsewhere is well-documented not only recently in Reinhart and Rogoff (09), but in many earlier writings. Lane (66, Chs.4,5,6) gives considerable detail for Venice. Defaults and financial crises are also very thoroughly described by Cipolla (86) for Florence in 15th century, using entirely modern monetary concepts: there was a credit boom, tight monetary policy (emissions) tried to contain this, an excessive credit squeeze ensued leading
to an economic bust. As a result of its prudence Ragusa appears to have avoided both serious budgetary and debt problems, and high inflation. However, the evidence to support these views is more qualitative than quantitative, and even the latter is very fragmentary, and incomplete. This leaves a very nice field of cliometric research open for economists and historians using the still little-explored wealth of hard economic data in the Dubrovinik Archives.

**IV (iii) Evidence on ease of doing business**

It is generally agreed that Ragusa’s government was strongly commerce and trade oriented, and the ruling nobility understood well this was the basis of their wealth. It would seem they also understood that it was necessary to extend this good business climate for commoners as well, which spawned a flexible and adaptive merchant class quickly able to react to demand changes or external shocks, seek new markets, adapt trade routes, change products. The frontispiece citation from Kotruljevic on institutions symbolises how this attitude was already well established by the 15th c. Historians’ writings contain innumerable references as well as illustrations of this business friendly environment which we review selectively below. But the first contribution of our paper is to cull and systematize from the literature some quantitative evidence that reflects the high quality of relevant institutions. Thus we start with Tables 2 and 3 which respectively quantify some admittedly “soft“ data: the legal proceedings and their time-lapse for a handful of bankruptcy cases; and the share of notary entries for commercial and personal activities.

In Table 2 for a benchmark we note from the World Bank *Doing Business Report* (2013) that in 2012, the average time to complete settle a contract dispute (one of several indicators of the ease of doing business in modern analysis) the best was about 1.7 years for the OECD countries, the worst was 3.4 for the Middle East and North Africa region, and 3.1 for Croatia. For Ragusa in the 16th c. the available information gives a range of 1-3 years to complete a bankruptcy case brought to courts - a sub-category of contract disputes. True the sample is small, one has no idea how systematic it is (in both sources the information is only vaguely presented) start times and finish times are not always explicit or precise, and sometimes not stated at all. Hence our conclusion has to remain very tentative and conjectural. If however if the real time-range is double (1.5 -6.0 years) this would still seem very efficient for the times, given realities of travel, documentation etc. In fact many of the cases shown here deal with Ragusan ventures in other countries/states, which even today complicate matters and generally add to the time required.
### TABLE 2. ISOLATED CASES OF TIME FOR BANKRUPTCY PROCEDURES

**RAGUSA 16\(^{th}\) and 17\(^{th}\) c.**

(A common modern measure for ease of doing business)

<table>
<thead>
<tr>
<th>Year/Period</th>
<th>Nature of Case</th>
<th>Years To Final</th>
<th>Source</th>
<th>Time to start</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>BEST:OECD high y</td>
<td>1.7</td>
<td>&quot;</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>WORST REGION: Mid.East.N.Africa</td>
<td>3.4</td>
<td>&quot;</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>CROATIA</td>
<td>3.1</td>
<td>&quot;</td>
<td></td>
</tr>
<tr>
<td>Dec.1566</td>
<td>Nobles Sorgocevic&amp;Lukarevic Florence/Venice business bankrupts;Rag &amp; Italian creditors turn to Ragusa courts, some local assets frozen immediately-final decision May 1570</td>
<td>3.3</td>
<td>Tadic(48) pp.287ff</td>
<td>&lt;week</td>
</tr>
<tr>
<td>1577 (Sept??)</td>
<td>Joint business of Cveta Zuzoric&amp; husband Peshonija fails, immed. Put under oversight , claimants given 3 days to file claims with court notary – numerous do -- court process begins, most seem done/agreed/decided by Mar. 1580, but new claims arise as late as 1583</td>
<td>2.5—(but new claim in 1583)</td>
<td>Tadic (48) pp.327 ff.</td>
<td>3 days</td>
</tr>
<tr>
<td>1575</td>
<td>Ivanivic&amp;Dabovic Ragusa merchants in Serbia bankrupt, courts seized Ragusa assets against claims of 5,850 ducats. In judgment they were to send 860 ducats value of ox-skins immediately, pay rest in yearly annuity at 6% interest (no further time details given)</td>
<td>About 1 yr.?</td>
<td>Palic (08) p.79</td>
<td>Sequestration Within dys. Weeks ??</td>
</tr>
<tr>
<td>1571</td>
<td>A partnership in Smederovo and Belgrade, but registered in Dubrovnik 1565 , announced bankruptcy: but creditors proposed continuation with restructuring (&quot;sanacija&quot;), and accepted annual payment of 200 talers</td>
<td>???n.a.</td>
<td>Palic (08) p.79</td>
<td></td>
</tr>
</tbody>
</table>

It is also notable that the apparent time required to initiate cases in the courts, time given creditors to file claims, was very short—a matter of days or weeks. This is consistent with the qualitative judgments about court efficiency in the literature (including under the general ROL evidence we discuss later.). Palic(06/07) in particular
emphasizes the thoroughness and speediness of the process, the comprehensiveness of the underlying law and practices which contain many terms familiar even to the present day: sequester, liquidation, restructuring (sanacija in Croatian), rescheduling of term, etc. He claims (p.23) that ‘at that time, Dubrovnik was admired by Europe for its court procedures methods, being the exception from the middle ages darkness, showing justice and honorableness.’ Speed and efficiency of courts in all cases, civil and commercial, is a point also made by others as Lonza (next sub-section).

Palic (08) further attests to another aspect of bankruptcy which demonstrates a favourable business climate; (p.83) unlike the “debtor’s prison” practices elsewhere - “the ultimate aim of bankruptcy...was not just settling [with] the lenders, but it was rightfully considered ... helping the debtor overcome the state of inability of paying their debts... creates an atmosphere for further co-operation and doing business together.” This tendency to encourage out-of-court settlement is also seen in the general activities of courts beyond cases of bankruptcy—Table 7 and the extensive studies of Lonza summarized below provide considerable evidence on this..

Perhaps the first and most common modern measure of the EDB is days and costs needed to start a business; we have so far not been able to find data approximating this concept evidence—though this may be available in the rich Dubrovnik Archives. However, it would appear that starting a business or venture was frequently done with a relatively simple registration with an official Notary entry,, thus apparently uncomplicated and almost immediate as is the case in many advanced countries today. In Table 3 we see indirect evidence of the extensive use of notarization; it shows the percentage distribution of 1,492 Notary entries in the years 1299-1301. If we consider Testaments, Dowries, and Personal Service and Employment notarisations as personal at least 33% of notarizations are business related—starting or operating a venture,, dealing with debts, sequesters, guarantees. In fact this must be a lower bound, since in Testaments there were surely business-related elements, as well as in the rubric Services (in household) and Employment., and even Dowries — which were often designated for partial commercial use.

Palic (2006 &2008) describes briefly numerous cases of bankruptcy of Dubrovnik merchants in Balkan states/cities, but details are not always complete: in some cases amounts are given of debts, repayments, in others partially. In most cases a year is given for the initial bankruptcy insolvency, but not for time for making claims, or dates for final resolution. Hence we do not include them in Table 2, but it is abundantly clear in these articles that most cases once started went through a thorough process apparently speedy in the early stages, even if the two parties kept returning to courts to

39 The data are compiled from an extremely informative listing by Lucic (1993) of all such entries by one notary (there were by then a handful— which not only transcribes each form the Archival Notary books, but defines the category, provides an overview of the process, and an extensive index of individuals named, which allows some further analysis in later tables.
obtain satisfaction, sometimes after a long pause, and therefore any final resolution may have taken years.

**TABLE 3. RAGUSA 1299-1301 NOTARY ENTRIES BY CATEGORY**

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th># OF ENTRIES</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TESTAMENTS</td>
<td>149</td>
<td>10.4</td>
</tr>
<tr>
<td>DOWRIES</td>
<td>68</td>
<td>4.7</td>
</tr>
<tr>
<td>SERVICE/EMPL(zaduznica)</td>
<td>741</td>
<td>51.9</td>
</tr>
<tr>
<td>APPRENTICESHIP</td>
<td>39</td>
<td>2.7</td>
</tr>
<tr>
<td>AUTHORIZATION(punomoc)</td>
<td>29</td>
<td>2.0</td>
</tr>
<tr>
<td>RECEIPT/VOUCHER/AUTHORIZATION/POWR OF ATTORNEY</td>
<td>13</td>
<td>0.9</td>
</tr>
<tr>
<td>PROPERTY TRANSACTIONS</td>
<td>171</td>
<td>12.0</td>
</tr>
<tr>
<td>GOODS TRANSACTIONS</td>
<td>119</td>
<td>8.3</td>
</tr>
<tr>
<td>SHIP/CARGO TRANSACTIONS</td>
<td>19</td>
<td>1.3</td>
</tr>
<tr>
<td>BUSINESS/PARTNER AGREEMENT</td>
<td>17</td>
<td>1.2</td>
</tr>
<tr>
<td>DEBT</td>
<td>1</td>
<td>0.07</td>
</tr>
<tr>
<td>COLLATERAL</td>
<td>40</td>
<td>2.8</td>
</tr>
<tr>
<td>APOHA (???)</td>
<td>15</td>
<td>1.0</td>
</tr>
<tr>
<td>GUARANTEE</td>
<td>3</td>
<td>0.2</td>
</tr>
<tr>
<td>FRAGMENT (this may be incomplete information)</td>
<td>5</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
<td><strong>1429</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Source: Authors’ computations based on Lucic (1993)

The qualitative evidence of ease of doing business merits some elaboration and we show below it almost universally confirms the conclusions implied by the data. That well-functioning notary and registration procedures and records for business contracts were established at least as early as the 13th century are referenced by many writers, and according to Stipetic (00-p. 18), existed from as early as 1200, with formalization in the 1272 Statut, and further details established in 1277 for economic rules in the Customs Book. That Ragusa was among the earliest states to formalize commercial registration and contract procedures is a common claim of its many historians. All of the above imply such an early development, and their periodicity, at least as early as the
beginning of the 13th c., does suggest it was among the first to implement “pragmatic literacy,” only marginally later than Italian cities and the first Dalmatian city, Zadar. Dates for Western Europe given by Kuran (2011, p.242) allows a broader comparison: “In Venice written contracts became mandatory on matters of importance [in court cases] in 1394, in France in 1566, in Scotland in 1579, and in Belgium in 1611. In England they became mandatory on all contracts with the Statute of Frauds of 1673.” Kuran (p.243) also mentions that the first agreement of Ottomans with western trading states imposing documentation requirements for court disputes involving foreign merchants, was that with Dubrovnik in 1486, preceding the Mamluk-Florentine treaty of 1497 which did the same, and one of the most important “capitulations,” that ared with France in 1536. It needs verification to ascertain whence came the initiative for the 1486 Dubrovnik agreement, but given the history of passivity in Ottoman actions and initiatives of Dubrovnik trading efforts, the best guess would be from Dubrovnik.

The depth of formal and informal institutional support for commercial activity is also evidenced by the renowned richness of the Dubrovnik Archives—the records are so large that it required 61 pages for Carter (72 Appendix 3, based on the work of Gelcic 1910). To merely list the names of documents, under 40 categories such as Council Proceedings, Miscellaneous Notary Documents, Manufactures, Customs, Administration Receipts, Expenditures, Acquisitions, and so on. Earlier the economic contents were reviewed by Tadic (1961), with a clear message of the vast possibilities for doing research on economic questions about Ragusa using primary source information and data. Many other early institutional elements that today would be labeled “a favorable business and rule-of-law climate,” can be pointed out. Thus Luetic (61-p.107), and Carter (72-p.157) note the beginnings of the first maritime insurance policies were organized as early as the 14th c, while Doria (87) discusses how thoroughly this had become elaborated by the 16th century. A revealing description of bankruptcy procedures in the 14th-15th c. in several articles by Palic (2006.a, 2006.b, 2008) concludes in (2006.a-p.23) : “court decisions ... were kept in very thorough transcripts with notified damage compensations, punishment types and dispute settlements.” he also claims that “at that time, Dubrovnik was admired by Europe for its court procedure methods, being the exception from the middle ages darkness, showing justice and honorableness.”

The early and pioneering development of modern accounting by Kotruljevic (1440) is described by Stipetic (00-p32-as well as Krekic and several others. Indeed there is

40 A term suggested by Nella Lonza in a private communication, in which she also indicates the beginnings of document formalization in Italian cities, in the 11Th C., with Zadar probably the first in Dalmatia quickly followed by Ragusa.

41 Nenad Vekaric, Director of the History Institute in Dubrovnik, confirms to us in private communications the existence of huge amounts of economic information, but with a strong caution about the large investment of time needed to collect systematic data-sets.

42 While this claim is consistent with other writings, unfortunately Palic does not provide references to European writers of the time to substantiate this claim.
now solid scholarly evidence that this was the first formalized ‘handbook’ on how all
good merchants/traders should maintain balances in accounting books, use double-entry
bookkeeping, \textsuperscript{43} use banking instruments for trade such as bills of exchange,
letters of credit. This alleged ‘first’ has put on the table of the modern accounting
literature a debate: was the first as was always considered the 1496 manual of
Venetian Lucca Pacioli, or should this honor be given to Kotruljevic’s 1440 chapter on
double-entry? The issue is beyond reach of our paper, and we leave it at the following;
in a personal email communication from the Dutch scholars Stipetic mentions,-Postma
and van Helm suggest that while indeed Kotruljevic briefly describes double-entry
bookkeeping in 1440 and later, the first truly complete manual on how to do it, and the
one which had the greatest future impact was that of Pacioli in 1496.

But for our purposes, the now-accepted fact that Kotruljevic did have such views and
wrote them in a manuscript passed around manually, is clear evidence of the right
attitudes to promote commercial activity and prudent state finances. Indeed, Kotruljevic
was very early in the history of economic thought expounding views that were very
radical for the times, such as interest being the price of capital, credit being critical to
fuel commerce and only usurious if excessive (5-6% was his proposed limit); His 1458
treatise “Il Libro dell’Arte di Mercantura” argued all these were requirements to achieve
prosperous trading, and not least important he noted the need for the state to ensure
an open mercantile and trading environment conducive to making money, creating
wealth, minimal interference of state in commerce, prudent state finances. Kotruljevic
presaged by six centuries today’s received wisdom about ROL and a good business
climate. He would well deserve honorary mention by the World Bank’s Governance
and Doing Business Report.

A second case showing the advanced state of scholarship, and especially of interest to
modern economists is another little-known first by a citizen of Dubrovnik. A recent
review of least absolute value regressions (LAV) by Dielman (05), writes that Rudiger
Boskovich in 1757 and 1760 works “explicitly discussed minimizing the sum of the
absolute errors as a criterion for fitting a line to observation data. This is the first
recognized use of the LAV criteria... and is prior to Legendre’s announcement of the
principle of LS in 1805.” \textsuperscript{44}

Numerous writers state that the first quarantine station in the Mediterranean was
established in Ragusa in 1377 (the Lazaret, which were eventually moved to the
mainland still stand today as a commercial-entertainment centre). Three recent studies
by public health specialists explore this world-first: Frati (00), Lang and Borovecki (01),
and Cliff, Smallman-Raynor and Stevens (10) While quarantine stations might be
considered a social fairness measure like hospices and government-employed
physicians, arguably the 1377 quarantine station was, as is well documented in
deliberations of the Great Council (see Frati) in the first instance motivated by the need

\textsuperscript{43} Stipetic(00) refers to non-Croatian scholars – presumably less-biased- who have found clear evidence that
Kotruljevic was the first to develop double-entry bookkeeping, in 1440, well before the 1496 work of Lucca
Paccioli which had earlier been thought to be the first.

\textsuperscript{44} We thank Kresimir Zigic for pointing this out. Dielman also suggests that Gauss was aware of the work of
Boskovich.
to continue doing business. after the first waves of the Black Death in the middle of the 14th century.

But the state’s direct role in the economy was not large—including surprisingly less expenditure on military and naval forces than one might expect in this period, as we elaborate in Section IV.(vi). There was however the usual mediaeval Europe regulation of professions and crafts with guilds, though it is not clear how restrictive they were. Also common were brotherhoods or fraternities (“bratovstva” in Croatian) which acted as early forms of commercial ventures, shareholding companies, and investment pools. Further, the state did provide direct subsidization and some control in three areas: shipbuilding, maintenance of grain reserves for times of crisis, and promotion of textile manufacturing in the mid-15th c. The first two were in place throughout Ragusan history and are considered by most historians to have been fairly successful interventions. The third is an excellent early example of protectionism to encourage an infant-industry, today known as Industrial Policy—IP. This is not considered very successful. Most analysts recognize its failure and note that, sensibly, the government eventually did so too, and ended this policy after a century by about 1550. Stuard (1972)-p.163) explains the initial government reasoning as a sensible reaction to the external shock in mid 15th century, when scarcity in supply of textiles from Florence threatened an important trade-line with the Balkans. But he too agrees this was not in the end very successful, giving a very detailed account of the repeated and futile efforts to support the industry. (pp.294-308): “Throughout the period 1450-1550 government legislation on cloth manufacture was continually trying to bolster production...[using various measures like] customs duty...incentives for merchants to sell home-made cloth...regulating quality standards...financial support for a central workshop...[But]competition was being felt with increasing effect in 16th c....Dubrovnik’s government, on reading this situation, began to invest in alternative industries such as gold and silver working which by the second half of the century had more importance for export trade”.

The consensus that shipbuilding was a relatively successful intervention cannot be demonstrated quantitatively without more detailed primary-source data on the actual subsidy costs, but it is worth considering the main qualitative arguments in the literature and observations by contemporaneous foreign observers. Basic (06-p.153.) cites several contemporaneous Italian observers who refer to the excellent craftsmanship and superior quality of Ragusan-built ships: Bartolomeo Crescenti (Rome 1602) states the best craftsmen and shipbuilders of the Mediterranean are those of Ragusa; Pantera (Rome, 1614) considers the best shipbuilders those of Ragusa, Portugal and England; Sagri (Venice, 1574) contends Ragusan ships are the strongest in the world, and of the best wooden materials. Harris (98) also argues that support for

45 Vardic(07) describes in detail the history and functioning of one of the biggest, St. Antunin. As in much of mediaeval and Ragusan life, a nominally religious connotation was common for commercial activities. A very detailed discussion of bratovstva is given by Vojnovic (1899-19000).
shipbuilding in the form of provision of a location (the Arsenal, first at the old central harbour, then in Gruz as of the 16th century) was indeed successful, as evidenced by the strong international reputation for shipbuilding mastery noted above. Harris’s reasoning goes beyond that found in other works, concluding—in our view very sensibly—shipbuilding support was successful because it made economic sense, while nurturing a textile industry to compete with the long-standing masters in Florence, Bruges, Ghent—did not.

A somewhat different view of the non-interventionist government is given by Janekovic-Roemer (03), who shows that increasingly during the Golden Years of the 15th and 16th centuries, rules for personal behaviour, and public decorum became more prevalent and restrictive, concerning attire, household maintenance, personal and family behaviour, religious observance etc. She does not however claim that intervention in commercial activities increased, from which one might conclude that in our Tiger anachronism, Ragusa was more like Singapore than Hong Kong. In a similar spirit, the argument of Perlender (05) that the “paternalistic” conservatism of nobility explains the inability to change and react to new competition in the 17th-16th centuries, is in effect also an argument that government interventionism was greater than most believe, and had negative effects.

Finally, that the size of civil service was small is suggested by Sisak (10), estimating it at 160 people in mid 15th century when the population was probably 50,000 or more. However this does not include Ragusans on consular service and any military personnel. Available data in Caretr (72) and Kreic (80), indicates approximately that the number of consulates was at least 40 in the Golden years, and rose to 70 or more in the next period. With several people in each consulate amend perhaps 200 or so soldiers (as we show below) the numbers of civil servants may be 2-3 times Sisak’s estimate—but that would still be small, not exceeding 1% of the population.

In sum considerable evidence in the form of indirect quantitative measures of business related formalities, bankruptcy treatment in courts, as well as extensive qualitative indications from historians, generally point in the direction of HH8, that the climate for commerce, or doing business in the modern jargon, was quite favorable.

**IV (iv) Evidence on effective Rule-of-Law**

Numerous historians emphasize the rules-based governance of Ragusa and its relevance for the prosperous economic development; the spirit of this is succinctly captured in the frontispiece citation from De Diversis. Stipetic ((00) provides a good overall summary of the favorable legal basis and practice of Ragusa and adds a vivid

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46 That there were unsurprisingly more in the important trading partners is shown explicitly by Carter (72-p.145, Fig.22). In the mining regions of Bosnia and Serbia the number of permanent resident merchants in the 15th. century was as little as one or two (Vrh Bosna = Sarajevo; Borac), and as many as 15-30 in the main trading centres (Fojnica, Visoko).
history of Ragusan writings on economic theory. But with the exception of several works by Lonza which we rely upon considerably here, the literature again is largely non-quantitatively based. We will begin by presenting some selective quantitative evidence, sometimes indirect, which is consistent with HH 9: ROL was established early and was generally implemented effectively and fairly; then we will add some qualitative evidence for the literature to buttress the case.

**TABLE 4: RAGUSA 1299-1301 NOTARY ENTRIES RELATIVE TO POPULATION**

<table>
<thead>
<tr>
<th>City</th>
<th>#of Individuals named</th>
<th>Population Range</th>
<th>% of Population using Notary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Republic</td>
<td>3,066</td>
<td>(10,000)</td>
<td>31</td>
</tr>
<tr>
<td>Republic</td>
<td>3,066</td>
<td>(15,000)</td>
<td>20</td>
</tr>
</tbody>
</table>

Source: Author’s calculations based on Lucica(1993) and population summary tables in Havrylyshyn and Szczentyc (2012)

We start with some data on the use of a Notary in very early years, 1299-1301, based on the work of Lucic (1993) covering 1,492 Latin entries involving 3,066 individuals; Lucic adds some commentary and analysis. We have already used this work for above discussion and Table 3 information on types of activity covered by notarization. In Table 4 we calculate approximately the percent of population involved in those entries, as an indicator suggesting that Ragusans utilized formal notarization procedures quite extensively. As population estimates for this period are not very solid, we choose numbers that bias against our claim; nevertheless it must be noted these numbers are unverifiable estimates. Taking them at face value seems to say that anywhere between 20% and 50% of the population was involved in some way – surely a very substantial and wide coverage of population for the year 1300- though we have not yet been able to find comparator data for other states- and consistent with HH8, ROL was relevant and widespread as early as the late 13th c.

There is reason to believe that many of the individual named were “professional” witnesses (who did get a fee for this), hence we re-test this claim of widespread use of Notary from another angle in Table. 5. The number of individuals who appear more than 10 times accounts for only 10% of the total which is to say that 90% were users limited number of times. It would seem reasonable to posit that any merchants skilled craftsmen and middle income people might turn to a notary 2 or more times in a 3-year period, and those at bottom of social-economic ladder at most one time, so it is very

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47 No reliable estimates exist much before 15th c but many historians seem to accept range 14th c. of three to four thousand in city, a total of 10,000 -12,000 for Republic (see Appendix Table 1). To avoid overestimating percent column we use range of 4-7 thousand and 10-15 thousand respectively

48 Author’s rough guess, based on details of entries suggests large proportion from city – we use 2/3. Even when entry deals with activity outside city, it often involved city people, not surprising as wealthiest lived there.

49 The Republic did not yet include much of the territory added later (as in Fig.2) hence we take a maximum population 15,000. The city within the walls at no time had much more than 5,000 inhabitants, but we take as an upper bound 7,000; even the lower bound of 4,000 may be an overestimate as in 1300 and later many new houses were being added on empty lands—indeed at least 100 of the entries were for new construction, additions.
suggestive of widespread reliance that 55% of the individuals were named only once. The middle group, 35% were likely those with somewhat greater wealth or economic activity status.

TABLE 5. FREQUENCY OF INDIVIDUAL’S INVOLVEMENT IN NOTARY ENTRIES RAGUSA 1299-1301

<table>
<thead>
<tr>
<th># OF TIMES NAMED</th>
<th># OF INDIVIDUALS</th>
<th>PERCENTAGE DISTRIBUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Time</td>
<td>600</td>
<td>55</td>
</tr>
<tr>
<td>2-10 Times</td>
<td>385</td>
<td>35</td>
</tr>
<tr>
<td>11-25 Times</td>
<td>80</td>
<td>7</td>
</tr>
<tr>
<td>25+ Times</td>
<td>35</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Author’s compilation based on Lucic (1993). The Lucic editing of these archival sources has an appendix of all individuals named, with reference to the entry number, which greatly eased the above computations.

We turn next to some data that is understandably indirect, nevertheless supportive of the hypothesis that ROL was well implemented, relatively efficient and effective, and covered a wide swath of the population. Table 6 for the 15th c. shows the distribution of a large sample of 589 criminal court cases in an extensive archival study by Lonza, by type and outcome. The first point to observe is that while these were not civil cases, nearly one third (31.4%) did involve property violations of various sorts, hence the study does throw some light on the issue of EDB as well. Further it confirms the claim made by Palic and others as discussed earlier, that Ragusean courts strongly encouraged out-of-court settlements. The percent of cases going to final judgment was about 20% or less for bodily harm or verbal abuse cases, and many were ended in the midst of hearing the case, presumably because the two sides came to an agreement. This tendency was far greater for property cases with less than one percent going to final judgment (0.54% in Lonza’s raw numbers) — and even with the adjustment noted in Table 6 notes this was at most 1.8%.

The inclination to settle out-of-court and its encouragement by the courts only increased over time, as Table 7 shows. In a sample of 2,142 cases spread over nearly two centuries studied by Lonza, one sees clearly that the percentage going to final judgment in first half of 14th c. was about 40%, and declined steadily so that in the later years of the 15th c it was about 14-17%. Lonza (2002, p.104) indeed concludes that courts on the one hand encouraged this, and plaintiffs on the other hand “used” the courts as a form of pressure, bringing charges, or accusation even though they were altogether disposed to settle out of court. That the legal institutions of Ragusa facilitated this system more than perhaps others in the region is suggested by Palic (2006a and b), and 2008, by providing such services very low cost if not free — except for possible costs if found guilty — while in Venice and elsewhere there were potentially discouraging up-front costs. He also suggests there was very little political influence which was

50 the latter account for a perhaps surprising 29% of the sample, though this is also seen in Northern Italy and may reflect the “sowing wild oats” behavior of young nobles typical of the time.
limited to a few very big or significant cases and hence a level playing field; but this last conclusion is more qualitative and perhaps conjectural.

**TABLE 6. COURT ACTIONS BY TYPE AND OUTCOME (Average percent for 1423, 1466 and 1487)**

<table>
<thead>
<tr>
<th></th>
<th>BODILY HARM</th>
<th>VERBAL ABUSE</th>
<th>PROPERTY VIOLATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISTRIBUTION OF 589 CASES</td>
<td>49.4</td>
<td>19.2</td>
<td>31.4</td>
</tr>
<tr>
<td>DID NOT GO BEYOND CHARGE, PLAINT</td>
<td>7.22</td>
<td>3.54</td>
<td>70.27</td>
</tr>
<tr>
<td>END BEFORE HEARING COMPLETED</td>
<td>55.67</td>
<td>54.87</td>
<td>22.16</td>
</tr>
<tr>
<td>JUDGMENT- [% OF TOTAL]</td>
<td>21.31</td>
<td>20.35</td>
<td>0.54</td>
</tr>
<tr>
<td>[ % adjusted-see note]</td>
<td>[23.0]</td>
<td>[21.1]</td>
<td>[1.8]</td>
</tr>
</tbody>
</table>

**SOURCE:** extracted and calculated from Lonza (2002) Tab 4, p.85

Note: Row 4 calculation relative to total may not be conceptually correct measure of settlements; Lonza makes clear that most of those in row 2 were terminated because evidence or witnesses not available; we adjusted this by taking a percent of the remainder from those terminated, shown in [..]

The last set of quantitative information on the legal process, in Table 8 provides support for the view that the efficiency and speed of court procedures was quite good. The data is again based on an archival study by Lonza (1997), unfortunately mostly for the 18th c. which may or may not give a fair representation of earlier periods, but a subsample does cover the years 1276 and 1418. The first conclusion is that in all years well over half the cases were completed within a year. (N.B. In the last four rows the numbers are cumulative hence the values comparable to the first four rows are: 93, 92, 71, 78). The very early values show that cases taking more than one year were, at 47% and 39%, much higher than in the 18th c., as little as 7-8% in some years between 20 and 30% in others. That the speed was affected by case-load is also made clear by Lonza’s work. In two years of average case-load (1738, 1776) over 90% are done within one year, indeed more than half within 6 months; in years of a heavy case-load (1750, 1783), percent completed in one year is less, but still about 70-80%.
TABLE 7. TREND OF TERMINATION /FINAL JUDGMENT PROPORTIONS OF CASES, 1312-1499

<table>
<thead>
<tr>
<th>PERIOD</th>
<th>COMPLAINT ONLY</th>
<th>FINAL JUDGMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1312-1313</td>
<td>7.35</td>
<td>41.18</td>
</tr>
<tr>
<td>1348-1350</td>
<td>4.26</td>
<td>42.55</td>
</tr>
<tr>
<td>1372-1374</td>
<td>11.32</td>
<td>26.95</td>
</tr>
<tr>
<td>1401-1402</td>
<td>19.05</td>
<td>16.40</td>
</tr>
<tr>
<td>1423</td>
<td>25.73</td>
<td>16.40</td>
</tr>
<tr>
<td>1447</td>
<td>36.33</td>
<td>22.10</td>
</tr>
<tr>
<td>1466</td>
<td>48.59</td>
<td>2.1</td>
</tr>
<tr>
<td>1487</td>
<td>20.65</td>
<td>17.4</td>
</tr>
<tr>
<td>1499</td>
<td>17.02</td>
<td>13.8</td>
</tr>
</tbody>
</table>

Source: Lonza (2002), Tab.3, p.82 (total of 2,142 cases studied)

TABLE 8. SOME QUANTITATIVE EVIDENCE OF EFFICIENCY AND SPEED OF RAGUSA COURTS: 13th.-18th.c- Percent of cases completed, by months

<table>
<thead>
<tr>
<th>YEAR</th>
<th>1m</th>
<th>1-3m</th>
<th>3-6m</th>
<th>6-12m</th>
<th>12m+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1276</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>53</td>
<td>[47?]</td>
</tr>
<tr>
<td>1418</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>61</td>
<td>[39?]</td>
</tr>
<tr>
<td>1736-38</td>
<td>-</td>
<td>--</td>
<td>-</td>
<td>75</td>
<td>[25?]</td>
</tr>
<tr>
<td>1780-83</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>64/78</td>
<td>[22-36/]</td>
</tr>
<tr>
<td>1738</td>
<td>23</td>
<td>23</td>
<td>31</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>1776</td>
<td>15</td>
<td>14</td>
<td>42</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>1750</td>
<td>-</td>
<td>7</td>
<td>64</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>1783</td>
<td>-</td>
<td>-</td>
<td>34</td>
<td>44</td>
<td>22</td>
</tr>
</tbody>
</table>

Source: Lonza (1997, PP.265-272)

Thus, the limited quantitative evidence, while not precisely the same type of measurements as in modern day EDB assessments of institutional quality, would appear to be consistent with HH9 that Rule-of-law was widespread, generally efficient and well implemented. The only quantitative evidence for a level-playing field is very limited and indirect: the use of Notary registration for all sorts of personal and commercial contract appears to have covered a large part of the population. In addition to the quantitative evidence we have been able to compile here, it is worth adding there exists extensive qualitative indications of this in the literature, many of which we have already noted earlier.
It is important to repeat there were already numerous laws and regulations in the 12th c., and the 1272 Statut was first of all a codification of these. Furthermore, the codex of commercial laws continued to expand and be modernized throughout the following centuries. Virtually all historians agree that while the myth of noble blood and democracy are just that, and the primacy of nobility in governing the state was quite rigid, the application to all of the ROL was not simply paper laws, but it was quite effective in its implementation. A fairly strong “acid-test” is that in a historical period of great rivalries among states and nations, there exist numerous instances of Ragusa authorities enforcing claims by foreigners on citizens of Ragusa. Thus, the Pabora family of Ragusa was bankrupted in 1315, and over the coming years Ragusan courts ruled in favour of claims by many creditors from Venice, and the well-known Peruzzi bankers of Florence, conveying Pabora family assets to these foreign claimants. (Krekic97, XI, p.13 ff.). The Ragusan noble and merchant Bunic-whom we met above as Bona-a “tax-farmer “ in the Balkans on behalf of the Porte,-became in 1471 a fugitive from the Sultan after an alleged embezzlement of 55,000 ducats to his own account. The Ragusan courts seized his local assets to cover the claim, and years of litigation followed, with Bunic, the Porte, and the Ragusan courts coming to an eventual settlement. (Bojovic (98 p.114.-117). Bojovic goes on to cite many other court claims, noting further that “cases of a similar sort were repeated numerous times”.

IV (v) A “sufficiently fair” social policy

We use the word “fair” and not “equitable” (in the neo-classical economist’s sense of equality of opportunity,) as there was no question about the monopoly role of the nobility in government, or the fact that a large portion population lived at very low levels of income, particularly in the countryside. However, the consensus seems to be that the nobility paid sufficient attention to the well-being of those who must necessarily be the work force on ships, shipyards and trade-related activities, to ensure a degree of social stability unusual for the times. This may not have been altruism but a self-interested action, but sill quite enlightened compared to others. Furthermore, economic mobility was certainly possible for the most enterprising, many of the rich coming from amongst the “puk” (commoners), as evidenced above. Sisak(10-p.182) typifies the literature in contending: “The loyalty of the Dubrovnik population to the social order and hierarchical structure of government was atypical compared to other cities in the Adriatic”. His sketch of this social order may be too positive, but is worth quoting at length:

51 A tourist to Dubrovnik today, if taking a day-trip and picnic on one of the local “Carracks”, will be shown by the guide, a copy of the section from the Statut on the the rights of sailors and obligations of the captain, prominently displayed inside.
52 Bankruptcy of the Peruzzis and the Bardis in 14th century was one of the episodes of shock that could be investigated under the resilience hypothesis.
53 This was a very large fortune. In comparison, the annual salary of Diversis as teacher in the local gymnasium in 1440 was 180 ducats plus housing and living costs; Luetic (69) notes well paid sailors in 16th. c received 2-4 ducats per day, working half a year typically, this gave them 200-300 ducats per year, while shipmasters would have about about three times this amount, ie.600-900 per year.
“political monopoly of the nobility was accepted as the normal state of affairs...the welfare which prevailed in the city...and the possibilities to make profit and, to some extent to climb up the social scale...were also important...The nobility [had] a privileged position, but they in turn had to ensure the well-being of the rest of the population...The government saw to it that there was no shortage of food or anything else, so it procured grains and kept up the commodity reserves...Moreover the state was mindful of social welfare (assisting the poor who were directly sustained by the government), it secured the material life-conditions (waterworks, sewage, public fountains), it paid the doctors and apothecaries who treated everyone [without charge] from the Rector to the city's poor...it appointed teachers...{etc.}.”

Other writers agree broadly that social provisions were relatively unique, but are generally more realistic than the above citation.54 Carter (72-p.116) concurs that “on the whole, the ‘cittadini’ and peasants were ruled with wisdom and without oppression”, but balances this by noting (p.116) “[appointed governors of the territories] governed despotically...Dubrovnik’s ideas of liberty were not only restricted to a limited class, but did not extend a yard beyond the walls.” Diversis (1440 as cited in Stipetic (00) p.25) was blunter: “many noblemen and merchants have great wealth, but the majority live in sheer poverty...[the best of these] are sailors and peasants “ This comment on peasants may be at odds with Carter’s judgment of despotic governance in the territories; since grains were always in critical shortage, and as Carter (72.) notes the territory could at best provide one-third of needs, it is questionable that peasants who could not produce much surplus would be overly harshly treated, and the view of Diversis on the position of peasants makes more economic sense. The resolution of this inconsistency may lie in the fact that a regional governor or local knez was usually a very junior appointment for young nobles to as they began to fulfill their government obligations – and many may still have been in the usual stage of incomplete maturing attended by brash or even cruel behavior towards commoners. But as Krekic (1997..Ch. V) notes, oversight from the city was close and punishment for “immature” excesses of young nobles, including recall to the city, was quite common.

As to the true extent of poverty and how much social support was provided, Krekic, whose extensive works can by no means be characterized as romanticizing the Ragusan idyll,55 in his (1997, Ch. V) study of urban life in Ragusa goes into great

54 Sisak is also more positive than others on concordance of elites (p196): “never in the long existence of the Republic, except on rare occasions, did dissent among the nobility come out in public”. True, peasant revolts did not seem to occur, and intercencine nobility disputes were much less than elsewhere, but dissent did occur many times and had to be defeated, sometime brutally. Vekaric (05) recounts the largest such revolt of the Lastovo Island nobles.

55 He provides many demythifying studies, including for example on the notion that slavery was completely abolished already in 1416 in Krekic 91997, Ch.IV he makes clear from the written records that this was a mere beginning, limiting the trade in slaves form immediate hinterland to avoid conflicts with Bosnian bans.
detail to show that while indeed there was considerable poverty, especially at times of famine or other shocks, there was continual attention paid by state agencies from the Senate on down to consider measures to alleviate poverty. The main types of measures are listed below, but one micro detail reflects nicely the spirit of this attitude. In 1406 the decision to minimize fire-risk by prohibiting wooden buildings, including destroying existing ones, the relevant legal document stated: “simultaneous destruction of all (wooden houses) would harm very much the [poor persons who own such houses], hence the program was to be implemented by having groups of twenty-five demolished each year. In addition “not to burden too much the poor men in demolishing the said houses” they would be reimbursed for one-third the value, allowed to keep the materials, and could build on the same spot anew stone or dry-wall house. 56

Leaving aside some uncertainty on “just how fair was fair” in Ragusa, we turn to illustrate some of the specific measures aimed at social welfare., starting with basic infrastructure of benefit to all the population. We have already noted above that for some analysts, given the historical context, the building of churches and monasteries was a form of social welfare. Carter’s Table of principal buildings (p.484-5) used for our Table 1 also notes a synagogue built in 15th.c., though whether it was state-financed like the Catholic churches is not indicated. Not shown there are both a Mosque and an Orthodox Church which were approved in later years by the state, but it is unclear how they were financed.

Other infrastructure for the populace included street paving, as early as the 14th century, sanitation infrastructure, limitations on wooden buildings (to minimize fires) provision of water with wells, aqueducts, public fountains –including the famous Onofrio Fountain built in 1437 and still used today. 57 Hospitals and hospices, homes for orphans and indigents should be included as infrastructural provision for the populace, and a part of the health care system. The provision of health care and facilities is considered by many a pioneering high point of Ragusan social fairness achievements., and many of the historical volumes we have cited (Bojovic, Harris, Krekic, Stuard) emphasize this. A recent systematic review, by modern-day specialists on health policies from the National School of Health in Zagreb, Lang and Borovecki (01), provides many details using archival data and concludes: “it is obvious that Dubrovnik had a high level of health and social care organization (home for foundlings, residential home, {probably a ‘hospice”;au] various health regulations. Similarly, Frati (2000) details the introduction of quarantine, as well as other measures like seeking the best physicians in Italy, sending talented youth to learn medicine there, and so on. Frati realistically notes that the motivation for the famous first quarantine station of 1377 “originated mainly from the need to protect the safety and quality of the commercial

56 Krekic 91997, Ch. V, p.7. This study gives numerous other examples of actions to alleviate poverty.
57 Stuard (92) also confirms the many efforts at providing water supply by boat, and when this became insufficient the building of an aqueduct from the Ombla river (about 10km distant), with the Onofrio fountain at the city-end. She notes that with these projects, a new set of archival books began to be kept, Libri reformationes with data on many community projects. Unlike some other authors who attribute much of Ragusa’s effective governance to Venetian customs, or make no attribution, Stuard in this chapter mentions several times the legacy from Byzantium for health care, public infrastructure. Jenekovic-Rohmer (06) also gives Byzantine legacy a lot of credit.
network rather than for medical aethopathogenic purposes”, but she emphasizes that this definitely also provided a great social benefit to the entire population.

Provision of education for all classes in the city—but not in rural areas—provides additional evidence of “the patrician’s enlightened attitude toward talent” (Bjelovucic(70.p.62.). As early as 1323 a master Nicholas of Verona was appointed as a teacher on state salary, followed by along series of Italian teachers in greater numbers, so that by the mid-15th c. the famous De Diversis was in fact Diretor of a “gymnasium. Many writers cite him and other documents to the effet that these teachers should” teach well, solicitiously and assiduously all the pupils citizens and inhabitants of Dubrovnik {our emphasis} … without accepting any payment from those pupils.” 58 This policy continued as Bjelovucic notes in later, decline centuries, with the Jesuits being given state funds “to teach all youth who wish to attend public schools” and “sending bright boys (sic) overseas to study at government expense”. 59

The only hard data on education is the 1800 budget analused in Sec. IV. ii; the raw data behind Figure 8 suggests education expenses were in 1800 a high 6.8 % of total, but some dispute exists on this value, due to the problem we noted of the Bjelovucic data not adding up correctly. If we were to leave all components unchanged and take percentages of the summed value, the education share would be less, at 5.3%. However, some sources indicate the value for this category is half that Bjelovucic shows, and the share could be as little as 3.3%. 60 id this high or low? Unfortunately the Bonney (95) volume on state finances does not provide comparative values, though this very fact is suggestive of public education expenditures being so low that they are not shown in any of the tables or charts there. 61

The last category we will mention concerns the strategic reserves of grain and other staples, storing them in so-called “rupe” or granaries. built often as part of the city walls. The largest set of these— which can still be visited today—was built between 1542-1590, but earlier, simpler ones started from the first centuries. Related to this were interventions in grain markets such as capping prices in times of shortage to minimize price-gouging, direct sales by the state, and limitations on how much land peasants could plant in vines which gave far more yield in the rocky, hilly terrains of the Republic than grains. Some of these were for the mediaeval period arguably justifiable, as transport time and costs precluded quick filling of gaps in basic food requirements.

To sum up, the evidence Section IV. v contains only one hard data point for a very late period in 1800, but considerable fragmentary estimates and innumerable qualitative evidence in the literature, does show a consistency with "Ragusan state

58 Krekic (1997, Ch. VIII, p.226. This article provides extensive detail on education, literacy, the first public library in 1465, book holdings, sales, and printings. In Ragusa.
59 Most historians make reference to this—we cite here only Bjelovucic, partly because she discusses the late 16th c., suggesting that despite the decline of 200 years, Dubrovnik was still thriving and wealthy—an indication that while its aggregate GDP may have fallen considerably, per capita values may have held up or even increased—a hypothesis that merits further research.
60 We thank Rina Kralj-Brassard for these clarifications.
61 It is beyond the scope of the present paper to research further sources on public education expenditures in other mediaeval states, but this clearly is a potential topic for further research.
authorities undertook relatively enlightened social policies in support of the entire population, including many measures to alleviate poverty. This should not be overstated to imply an altruistic and equitable attitude, or always successful alleviation of poverty, nevertheless it seems to represent a high-point in this period of time.

IV (vi) Minimal Military Expenditures, Maximum Diplomacy

Berkovic (09) provides a comprehensive analysis of Ragusa/Dubrovnik foreign policy and this section is based to a large extent on his work, as well as that of Carter (72) which devotes several chapters to diplomatic developments over more than seven centuries with each of the main neighbours, trading partners, suzerains, friends and foes; in effect for each of the political phases lasted in Section II(i). Our sub-title avers to the commonly held view that Ragusa, unlike virtually all other nations and states of the period, did not achieve its commercial, power by use of force, substituting this with skilful and constant diplomacy. This hypothesis merits future quantitative research to confirm or reject the partial conclusion we reach on the basis of Table 3, for 1800, which may be quite unrepresentative of earlier centuries. However considerable qualitative evidence from the literature is strongly consistent with the hypothesis, even if the point may sometimes be exaggerated in degree. We start with a discussion of military/naval forces, then turn to a selective presentation of key diplomatic efforts, most of them successful, but a few less so. We do not include an analysis of the extensive network of commercial consulates, which should surely also be considered as part of diplomacy.

IV (vi) a Minimal Use of Naval and Military Forces?

The central thesis of Berkovic (09-p.220) that “foreign policy and diplomatic skills played a key role in the survival and development of the Dubrovnik Republic” represents a virtually universal consensus among historians, though his assertion that it was “a small country with no military force” may overstate the case. Consider a number of quantitative albeit fragmentary pieces of evidence.

We have already noted the treaty obligations with Venice to provide in wars 1 galley per 30 Venetian ones, and given the latter’s use of 100 or more in some of its wars as Lane (72) describes, there certainly was a minimum naval force of 3-4 galleys at ready. In fact Luetic (61) while also emphasizing the very small size of Ragusa’s naval force—the title of his chapter on this is “The Most Modest War Fleet” (p77-ff)—

62 Similar but less specific demands on Ragusean contributions were made under the Hungarian overlordship period. Under the Ottomans, this was not the case, as both Ragusa diplomacy and Ottoman wisdom realized that the most Ragusa could do is refuse to provide, or provide only peremptorily, naval forces to Christendom’s many wars against the Turks in the 16th-18th century
describes for the 17th century several types of war ships: large galleys (galija - two levels of oarsmen), small ones (galica about 30 oarsmen), and other types like frigates, the Neapolitan filuga, bargues and some smaller ones. Unfortunately he is quite imprecise with numbers - one or two of this, some of that type etc. Nevertheless one must infer a total of least 10 or more war ships - a very small fleet in any comparison but hardly a case of "no military force." Of interest is the claim by Luetic (61-p.78) that such ships were unusually modestly decorated with figures, scrollwork, painting - save for the obligatory representation of Sv. Vlaho-St. Blaise. Verifiable or not, this is certainly another indication of the financial prudence of Ragusan authorities.

The only numbers on land forces come from Lonza (1997,p.96) noting that in the first half of the 18th.c. there were about 100 local soldiers supplemented by 50 "barabantes" (foreign mercenaries??). One might expect that by this time the long-standing achievements of diplomacy would have minimized the need for actual military forces, nevertheless the number is quite low for a population of about 25,000 shown in Fig. 2. Furthermore by this time even the magnificent fortifications were outdated and surely far less effective against 18th.c. cannon-power. These numbers did not change much over the century, reaching by its end about 200 and 20 respectively - the reduction of mercenaries Lonza attributes to "the need to resolve problems of state expenditures."

We turn now to some qualitative indicators. On the one hand a number of these point to a modest force which at best provided a minimal deterrent defense, mitigated the threats of pirates, and allowed Ragusa to meet its obligations to contribute warships to its overlords. Luetic (61) emphasizes that the building of specialized warships was generally done by hiring foreign, (e.g. Neapolitan) masters, or even buying ships from Naples. That these ships in fact were not often used for war is suggested by reference to their employment as diplomatic couriers, transporting Ragusan diplomats on legations, or bringing foreign ones to Ragusa for negotiations. They were also put to use as escorts of commercial convoys protecting against pirate raids, and often on missions to destroy popular pirate havens in the Neretva region - although if short-term "agreements" were reached with such pirates to attack only, say, Venetian ships but not Ragusan ones, such missions would be suspended.

On the other hand, several writers emphasize that even the commercial fleet was outfitted lightly with cannon and deck arrangements for armed sailors/soldiers, all of which could be swiftly enhanced for war needs, thus a standing war fleet of 10-12 vessels could and was increased as required. Furthermore, expenditures on the massive fortifications must also be considered a military allocation. Finally, we found so far little discussion on the earlier periods from foundation to about 1200, when one might hypothesize that before Ragusa's commercial and intermediary importance was built up enough to make diplomacy a credible option, military actions and costs may have needed to be much larger. Suggestive of this, Carter (72) mentions several early attacks and sieges. In 866-7 Ragusa withstood a Saracen siege of 15 months behind its fortifications "of rubble and beams" - note the word is "withstood" not "repelled" In the 14th century at different times King Uros of Serbia and Tvrtko of Bosnia are known to have considered capturing Ragusa, but were discouraged by the likely very high cost of breaching the defenses. According to Carter, Tvrtko decided instead to "defeat"
Ragusa commercially by founding a competitive trading port in the Kotor region, Sveti Stefan, no need to comment on its limited success.

We have found only one secondary reference to actual defense costs, by as shown in Fig.8. There is a little doubt that at this time, unless there were huge off-budget expenditures, Dubrovnik’s expenditures on defense at about 12% of the total budget, is far below that typically noted for other states. There is an excellent benchmark in the literature in the work of Bonney (95) which has collected a large amount of data on European states’ budgets for the 13th -17th c; One of the volume’s key conclusions is that for most states military expenditure accounted for a very large share of at least about 20% to as much as 80% in times of conflict. Lane (73.p.426:) gives us some idea about military expenditures of Venice: in 1736 they were one-third of the total-after a sharp decline from preceding periods, when they must have been half or more . .

For earlier periods secondary sources give only qualitative judgments that military costs were very low, or at best some fragmentary estimates that so many ducats or dinars were spent in a given year on reinforcement of the walls. As no total values on state expenditures for earlier periods are known to use as a benchmark such fragmentary hard data is of little value. While future archival research may permit a more definitive testing of the hypothesis about low expenditures on military purposes, for now we may nevertheless conclude tentatively that the limited evidence is consistent with the first half of HH10: Ragusa had relatively low military expenditures at least in the late middle-ages period of its most dynamic economic expansion.

IV (vi) b Diplomacy as Defense

Our evidence does support the consensus in the literature of relatively limited reliance on military force; this makes a good deal of sense only if it can also be demonstrated that diplomacy substituted for this. The logic is simple: once it is realized that Ragusa was not only very small, but its immediate backyard territory outside the walls was very hilly, had an extensive but very narrow perimeter, and was surely very difficult to defend with small numbers against the much bigger neighbouring states and potential enemies, the only alternative was more reliance on diplomacy. But the relationship should best be thought of as a circular reinforcement: early efforts to provide defensive walls and forces at the least discouraged attacks and/or gave time for negotiations, but the small size and indefensible territory led to emphasis on diplomacy and neutrality; the increasing success of diplomacy over time lessened the need for military efforts.

Cvjetovic in his introduction to Jirecek (1948, p.11) further connects this circle to the policies of favouring commerce, especially foreign trade:

“diplomacy and trade were the foundation stones of Dubrovnik’s freedom and greatness. For the development of trade one needs peace, order and security…Since Dubrovnik was not so strong, in order to compete with the mighty Byzantine Kingdom or the Venetians ....9 and others – eventually the Ottoman
Empire, they grasped a first bit of national wisdom: go and make an arrangement with the neighbor who could inflict [upon you] heavy blows."

Hard data on the extent of diplomatic activity does come in the form of budgetary expenditures, but only for the 1800 budget in Figure 8 we have already employed extensively. The data certainly supports the view with diplomatic costs totaling a huge 42% of expenditures: 11% for consular expenses (though note fees recouped for services to others yielded 6% of revenues), and nearly one-third -31.9% - for various tributes, "good relations", diplomatic travel costs etc. However, these data may or may not be representative of earlier periods as we have noted in Sec. IV.ii.; indeed it would make sense that these represent a historical maximum, as in very early days defense efforts were more likely needed to establish a basis for trade and then diplomacy. Over time military/defense would then have declined proportionately, while diplomacy percentages could then rise. Nevertheless this very large share is striking.

The only other data evidence is quite indirect but equally striking. Several writers have pointed out Ragusa could actually profit commercially from wars between big powers by filling in the commercial gaps and needs created by diversion of their fleets to war. This was of course thanks to its effective multi-vector diplomacy allowing it to trade with many states who were mutual enemies. We reproduce as Figure 9 from Carter (1972) a graph of customs revenues data he compiled from the Archives 1500-1700, marking thereon the war periods which coincide very closely with revenue peaks.

We turn to the more extensive qualitative evidence. Ragusa's use of diplomacy as a substitute is widely noted, indeed praised, by virtually all historians; among modern ones Berkovic (09-p.220) typifies the view:

"through timely awareness of their geopolitical position...Dubrovnik entered into numerous international political and trade relations[and was] able to utilize [this] wisely and skillfully in the defense of their independence, sovereignty and economic growth, resorting almost exclusively to diplomatic means and diplomatic skill."

Berkovic and Carter both provide very detailed discussions of the many to and fros in Ragusa's relations with their always-threatening neighbours. Carter (whose praise is very succinct: "In diplomatic affairs Dubrovnik was a past-master"), devotes four long chapters of the book to such diplomacy over the course of the centuries from the Byzantine protectorate until the creation of Yugoslavia after W.W.I. Here, we draw primarily on these two sources to give a selective representation of the sorts of diplomatic efforts undertaken...It should be added that one side of diplomacy was the

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63 Carter (72-p.118 succinctly defined these threats: "The republic was in constant danger from the powerful enemies which surrounded it on all sides. The Venetians who claimed the monopoly of the Adriatic [Venice's version of the US Manifest Destiny doctrine was the" "Mare Clausum"- the closed sea-au.]...on the mainland the King of Serbia, the Ban of Bosnia, the Lord of Hum, all watching for an opportunity to occupy Dubrovnik whose splendid harbour they envied." One might add incidentally that such envy also provides strong circumstantial evidence of Ragusa's success.
purely commercial, consular representation in many states and cities with important trading volumes. We have discussed briefly the available quantitative evidence of such representation in II.(ii) above.

**Figure 8.: Ragusa Customs Revenues 1500-1700**

![Dubrovnik's annual revenue from import customs duty](image)

Source: Carter (1972, Chart XX, p. 272)

Ragusa withstood the aforementioned Saracen siege in 866-7 for 15 months thanks to its strong fortifications and preparedness, but it may not have come to a good end were it not for the appeal to Emperor Basil who sent a Byzantine fleet to relieve the city. A century later as Venice began to dominate the region de facto, Ragusa often yielded to some informal form of “submission”, accepting Venetian Counts and Archbishops, but formally continued to fly the Byzantine Imperial standard, and turned frequently to Constantinople diplomatically to offset the authority of Venice. This may mark the beginning of Ragusa’s skilful game of playing off one side against the other. About 1095, still under formal Byzantine protection, Ragusa turned to their enemy Venice to help ward off the incursions of King Koloman of Hungary. A hundred years later, in 1186, the Normans of Naples and Sicily occupied Ragusa, but the peace treaty negotiated most favorable and easy terms, with a Norman titular count, but all decisions of government to be made by the Great Council, no significant tribute

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64 This and subsequent episodes noted in the paragraph are based on carter pp.51-74.
required, and other treaties with commercially-important allies like Miroslav Prince of the Serbs co-existed with the Norman one.

The diplomatic skills honed by Ragusans in this period of many conflicting but no overwhelmingly strong powers, stood them in good stead during the Venetian protectorate, 1204-1358. (See Carter Ch. 3, and Berkovic pp210-215). The very fact that a formal treaty of submission after the occupation of 1204 was not signed until 1232 implies the rather limited authority of Venice. Furthermore the Treaty was not very onerous, with a titular count from Venice but great autonomy retained by Ragusa, the flying of Venetian flag, a token financial and in-kind tribute, (less than a thousand ipperperi, far less than the annual income of a modest noble merchant). We have already mentioned the fairly soft demand that in war-time, Ragusa was to contribute one galley per 30 Venetian ones- and at that numerous instances are cited of Venice grumbling about the galleys coming late, being poorly armed or manned. The obligations of Venice to defend Ragusa and the trading privileges accorded were in contrast quite substantial. While many other states/nations were simply forbidden to bring goods to Venice and buy products for export to the Levant for example, Ragusa was allowed this, with the first four shiploads each year paying a low duty of 5% (20% on Egyptian imports which Venice wished to dominate), and a somewhat higher one for additional ships—though over time the cap was raised either formally or informally. Merchandise from the Balkan hinterland—which we have seen was in this period a very large part of Ragusa trade—was free of duty.

The multi-vectoral game of Ragusan diplomacy takes on an almost bizarre complexity—Carter (72, p. 193) calls it “a maze of intrigue and counter-intrigue” during the Hungarian protectorate period., when the authority over Ragusa was even less strong than that by Venice, perhaps because the Kings of Hungary did not have the same critical interest in maritime trade. Ragusan authorities explicitly defined the policy in a diplomatic dispatch of the early 15th century: “[the Republic] had to be on good terms with these lords of Slavonia for every day our merchants and our goods pass through their hands.” But the big powers, Venice, Hungary and increasingly the Ottomans—could not be ignored either, so a constantly shifting web of treaties, explanatory legations in cases of dispute, began to develop in the 14th and 15th c., including Venice, Hungary, Ottomans, Serbian Kings (Uros), Bosnian Bans (Tvrtko), and the dissident Bogomil leaders, Lords of Hum (approximately Hercegovina), the Balsas, Lords of Zedda (parts of Montenegro,Kosovo), To ensure trade with the Levant and newly occupied Balkan lands, Ragusa arranged a trade treaty with the Ottomans already in 1397, granting it free trade in the Balkans, and highly privileged terms elsewhere, with a minimal 2% import duty, and annual tribute of at first 500 ducats, increasing over time as needed and negotiated to the minimum possible. Stipetic (04,p.37) points out

65 A dissident Christian animist-like sect, excommunicated by Rome; one of their leaders, Vuk, brother of King Tvrtko was given refuge in Ragusa in 1366. King Tvrtko was duly received on a state visit with proper pomp, signed a treaty of alliance, but his demand for Vuk’s surrender was not granted, and Ragusa was not punished for this.  
66 After Bosnian occupation 1436 this was raised to 1,000; in 1440 Ragusa gave refuge to Serbian Despot George Brankovic and to appease the Sultan offered to raise the tribute to 1,400; the fall of Constantinople in 1453 resulted
the underlying commercial interests of Ragusa in securing such a treaty on one side, and at the same time by the "Basel edict removes the stumbling blocks from the Christian side."

The ability to play off both Ottomans and Papal demands of allegiance is nicely shown by two diplomatic feats. In 1439 the Ottomans occupied Bosnia and Serbia and demanded of these tribute of 25,000 ducats – but also "invited" an envoy from wealthy Ragusa to come with a tribute. The envoy came but without a tribute; the Sultan imprisoned all Ragusa merchants on his territory as hostages. Lengthy negotiations resulted in Ragusa proposing a modest tribute of 1,000 ducats, accepted by the Sultan; merchants were released trading privileges as per the 1397 treaty were reinstated. (Carter p.200).

As the conflicts between Christendom and Ottomans intensified over the next century, Ragusa was ordered by Pope Paul III in 1358 to support the efforts of the Christian League, sever allegiance to the Sultan, cut trade relations, contribute a large sum to the war-chest and contribute five war galleys. Doing so would have surely been the economic death-knell of the Republic given its overwhelming reliance on trade in the Ottoman Empire. Her diplomats argued in Rome that doing this would only result in the complete destruction by Ottoman forces of their vulnerable city 'with all her precious sacred relics falling into the hands of the Infidel without any advantage accruing to Christendom.' (Carter p.330), and hinting further this idea was a plot by Venice to destroy its commercial arch-rival. The Pope relented and exempted Ragusa from joining the League. 67

The height of complex many-sided diplomacy and intrigue is exemplified by Ragusa's sobriquet in the late 16th.c of "Le Sette Bandieri" (The Seven Flags):

"Thus by her successful diplomacy Dubrovnik was under the aegis of seven different powers-Spain, the Papacy. The Empire of Naples. Venice Hungary, the Turks, and the Barbary Deys."... although they often were in difficulties with some of their protectors, they could always play one off against the other." (Carter p.333).

Not all diplomatic efforts succeeded to the same degree. As the economic centre of gravity shifted to West Europe and the Atlantic, Ragusa attempted to follow this, with increased trade with Spain, France, England, and even the Americas. When the American Revolutionary war led to US independence, Ragusa's ever-cautious

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in a much higher value of 5,000, but in 1458 it was negotiated down to 1,500, Ragusa arguing that the recent times of troubles had made them very poor.

67 It is of interest that, apparently, the Ottomans did not make similar demands of full loyalty, and military contributions from Ragusa, perhaps more wisely understanding this would mean its destruction by Christian forces, and the loss of a most useful trade and diplomatic intermediary. The latter is sometimes mentioned as a factor, with Ragusa being somewhat like Cold_War Vienna (vide: Orson Welles' The Third man.)- a comfortable and mutually convenient den of spies from all sides.
diplomacy at first retained close ties to England- which had begun already in 16\textsuperscript{th}.c as diversification to the West became imperative (see Ramsay (77). But in the same spirit of market diversity, Ragusa made a delicate outreach to the new country. This was, to apply anachronistically an American phrase, “a day late and a dollar short.” Trade with the USA did eventually take place but in a very limited and certainly not a privileged way. (Berkovic (09.p.217ff and Zivojinovic (77). At the end of its LIBERTAS, Ragusa, or better by now to say Dubrovnik, failed entirely in its demands to maintain some autonomy under French occupation in 1806. The Senate rejected virtually unanimously the possibility of allying with the Russians to avert French occupation, and the majority was against a proposal of Count Caboga (Kabuzic) to “embark our wives and our children and ask of the Sultan an island in the archipelago.” Deciding in favour of the French, they tried to negotiate continuation of de facto autonomy as of old, but French “indications” this would be granted came to naught and the Republic was fully disbanded as an entity becoming simply a municipality within Napoleon’s Illyrian province.

Arguably, both of these failures late in Ragusa’s history reflected the sharp decline of its strategic and commercial importance. the earlier success in diplomacy was not simply a matter of negotiating wisdom and skills, was most certainly not due as in some other states to military might, but was largely underpinned by a strong economic position.

But overall, the history of Ragusa’s diplomacy does support the underlying notion of HH10: substantial efforts and resources were devoted to diplomacy as a substitute for military and defense expenditures.

V. SUMMARY OF FINDINGS AND FUTURE RESEARCH

We begin with a few general indications on potential future research—several concrete aspects having been noted in the main text such as the issues of why population declined in an economic boom period. The most obvious direction is to turn from secondary-source methodology we have employed here, to primary source efforts using the very rich archival sources of Dubrovnik, widely praised as among the oldest and most comprehensive in the region despite the small size of the Republic. Perhaps the first area to start with is on budgets in earlier centuries, given our findings that the very late 1800 data do confirm the prudence hypothesis and that while all indications for earlier centuries point in the same direction, this evidence is entirely qualitative. The power of more and earlier budget data goes beyond a verification of the prudence hypothesis since its components relate to the many claims about limited armed forces, reliance on diplomacy, and even on social expenditures. Given Ragusa’s wide trading networks, one would expect that other archives—in Italy, Ottoman Empire, Vienna, other Dalmatian cities—also contain considerable material. But given the wealth of the Dubrovnik Archives—whose extensiveness we have referenced in the text—that is surely the place to start.
Is it worthwhile to continue on our methodological path, searching more deeply in the secondary literature? In comparison to archival research, this is a little like asking the question: should one invest in a high-tech underground mine where geological evidence of large gold deposits is firm, or use the low-tech methods of panning for gold in probably gold-bearing streams? The answer of course depends on availability of time and resources—if these are at hand in large amounts, the primary source approach is advised; if not, there is nevertheless a good probability of finding more "gold" in secondary sources. We do not say this lightly: the current paper should be considered as a second phase of research; in the first with an earlier paper, we found only quantitative information on economic proxies, and at best fragmentary "data" on institutions; in this second phase with more literature searched we have been able to compile a first set of "data" on institutions. Furthermore, the research process has been limited to literature that is accessible in our University Libraries and digital publications – which is to say almost entirely literature dating from at best the last four decades. Yet it is clear in bibliographies that a vast amount of writings on Dubrovnik in many languages is still there to be "panned."

We turn now to summarise our findings. The stated aim of this paper comprised three points. First was to compile the best possible data-bank of economic activity proxies based on secondary sources and test common hypotheses about Ragusa's economic success. Second to demonstrate with both quantitative and qualitative evidence that this success can be attributed to favourable institutions. The third point follows from the second—Ragusa/Dubrovnik is a good example of a very early Tiger economy, showing that today's Institutional Paradigm is not that new and goes back to test the late mediaeval years.

While our time-series have many shortcomings, they are a first in the literature on Dubrovnik, and as posited they have been used to largely confirm—with minor modifications—the most common hypotheses in the literature about what happened economically in the mediaeval period. The quantitative evidence strongly confirms that the "Golden Years" of prosperity were indeed from the mid. 14th to the later part of the 15th c.—but probably lasting a bit longer than the common 1550. Similarly data confirm the view that carrying capacity for population was far below the 90,000 peak reached in 1500—the logic here being that a sharp population decline after that while the economy was booming can only be consistent with the fact that 90,000 was far in excess of real capacity. It is also confirmed that the period of decline is most likely attributed to the new sea route to the East after Vasco de Gama, which precipitated an unbeatable new competition by rising West European powers. On this too a slight modification is pointed to by the data—the decline was not at all immediate with Ragusa's trade continuing to grow for nearly a century after Vasco de Gama. How they managed this might be an excellent future research topic—in effect a study of resilience to an external macro shock.

The hypothesis that Ragusa equaled Venice in maritime prowess may seems to be supported by shipping data around 1575, however this was one the special periods in Venice's history with its fleet decimated by one of many wars. For most of the period
Ragusa had a smaller fleet, though in proportion to their populations, there is little doubt that Ragusa came surprisingly close to Venice, and the hard data does support the claims of it being perhaps the major rival of Venice despite its much smaller size. Finally we propose a new hypothesis not explicit in the literature and based on the work of Stuard: that the Silver period (about 110-1350) while far less prosperous it was economically extremely dynamic, laying a strong basis for the boom years to follow. The test is limited but all indicators are consistent with the hypothesis.

On the second point the quantitative evidence is more limited, though that is also true of institutional vs. economic variables even today, a reflection of the less measurable nature of the former. Nevertheless, surprisingly even the secondary literature contains a lot of numerical indicators of the nature of the business climate with very early reliance on formal notarization and registration of commercial dealings and contracts, favourable legal process for bankruptcies, and efficient and relatively speedy court proceedings. With a few pieces of quantitative information complemented by innumerable qualitative assessments we find that virtually all the evidence one can muster, despite its "softness" points in the same direction. All five of our hypotheses on favourable institutions seem to be supported: fiscal and financial prudence; laws and regulation’s friendly to commerce early establishment of formal and informal rule-of-law implemented effectively and in reasonable time; enlightened social policy for the mass of the population which provided stability; and limited military expenditures to maintain security with an alternative reliance on extensive diplomacy.

It is important to emphasise that the evidence on institutions is subject to many qualifications - as is typical in economic history works especially this far back in time - and that further research to improve the data is surely warranted. At the same time, we also wish to underline that the thrust of all of the pieces of evidence, as if in a logical phalanx, is virtually unanimous in its support of the main point: **Ragusa/Dubrovnik pursued wise policies on both the macro and micro level intended to ensure the greatest opportunities for trade and economic growth.** Our evidentiary phalanx is incomparably thinner than current statistics, along its line is variable in its strength, and has many gaps. Nevertheless, it all moves towards the same point, few if any of its parts would lead to contrary conclusions. It is this characteristic of our findings that points finally to the third point: Ragusa can serve as a good example of application of the Institutional paradigm more than half a millennium back, and deserves to be known as a historical lesson for current questions of optimal economic development strategies.

**A 13th CENTURY EXAMPLE OF THE INSTITUTIONAL PARADIGM IN PRACTICE:**

**EXPLAINING ECONOMIC PROSPERITY IN MEDIAEVAL RAGUSA**

Oleh Havrylyshyn and Nora Srzentic

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68 Respectively - Visiting Scholar, Munk School of Global Affairs, University of Toronto,
“Among permanent institutions [the first] is responsible to preserve justice and order among wholesale and retail merchants, and customers, irrespective of whether they are foreigners or citizens”

Filip de Diversis, Ragusa: 1440

For presentation at Economic History Society Conference, York University, April 5-7, 2013

[PRELIMINARY DRAFT –NOT TO BE CITED WITHOUT PERMISSION]

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As cited and translated by Stipetic (2000); de Diversis was an Italian teacher in Ragusa’s gymnasium who wrote in 1440 the book *Situs Aedificiorum, Politiae et Laudabilim Consuetudinum Inclytae Civitatis Ragusii*. 

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I INTRODUCTION AND MOTIVATION

Over the period 1300-1800, The Republic of Ragusa (today Dubrovnik), despite a tiny population of well below 100,000 and very small infertile territory that was difficult to defend, achieved a remarkable degree of economic prosperity and disproportionate importance in Mediterranean trade. Its achievements have been recognized by contemporaneous and modern historians, and most attribute this not to mere luck of location, but good governance with atypically benevolent rule providing many basic needs of commoners, institutions favorable to commerce, upward class mobility, and meaningful rule-of-law. Thus Lane’s history of Venetian maritime prowess points to Ragusa as the principal rival of much larger Venice; Braudel –albeit briefly- remarks on this “jewel of the Adriatic” and how its ships were able “to snatch away goods from under the very eyes of Venetian merchants.”

This paper’s novelty is two-fold: first it will reassess these favourable views of Ragusa using a quantitative data we compiled from secondary sources, and second, albeit more tentatively, it will provide selective qualitative evidence to illustrate its favourable institutional and rule-of-law environment. By implication a third contribution will be, using the example of Ragusa, to show that the modern-day “Institutional Paradigm” (the critical role of good institutions in promoting economic prosperity) goes back at least to the 13th C. We recognise that Ragusa was not unique in that regard, as several Northern Italian city-states followed similar development models. Further, there may be cases of Mediaeval Tigers elsewhere in the world, perhaps one being the Ryukyu Kingdom in the 15th-16th C. which analogously was a formal tributary of a much bigger power, China, but with extensive autonomy and emphasis on maritime trade achieved a disproportionate importance and prosperity in the North pacific region.

Most of the literature on Ragusa, even the most recent, is based on qualitative analysis with little or no use of the quantitative methods that are increasingly common in economic and historical research. We undertake to apply a quantitative approach to test some of the main interpretations in the literature about Ragusa’s success, using data culled from secondary sources. Ours is not the first study of Ragusa to use data, but we believe it may be the first to do so systematically rather than fragmentarily, and to generate time series of data proxying economic activity approximately over the period 1300-1800.

A few clarifications on methodology. While we use a quantitative approach the data will not be strong or comprehensive enough to allow econometric analysis, but at most tabular/graphical presentation showing visual correlation, and some bivariate correlation tests. Our secondary data source is the historical literature: we compile any

70 The paper might be considered a mirror-image of the approach in Kuran (2011), starts with the same principle we do -“when communities differ in their economic accomplishments, the reason often lies in the legal regimes under which they conduct business”- though his purpose is top show that inadequate institutions explain why the Ottoman-Muslim Empire fell behind in the Middle Ages.
71 Venice is given some attention here, as Ragusa’s model, nemesis, and main competitor in trade.
fragmentary statistics there into a time-series. Most such statistics are based on primary, archival sources, but are very partial and sometimes vaguely stated in words. There is however enough coverage over a long time for many relevant variables: shipping tonnage, fleet sizes, population, wealth indicators, customs revenues, consular activities, budget data, even some crude Maddison-type estimates of GDP. For institutional variables current research uses data compiled by the World Bank, EBRD, Transparency International, Polity IV, Freedom House and others. It would be unfeasibly heroic to attempt giving analogous metric to institutions in mediaeval era, nevertheless, our analysis of institutional determinants will be cast as much as possible using such concepts as governance, voice, corruption, Rule-of-Law (ROL), ease of doing business (EDB), financial prudence. We are able to provide some limited quantification on institutions, but they even "softer" than proxies of economic activity, hence conclusions on institutional quality are more tentative.

The rest of the paper is structured as follows. Section II reviews briefly the traditional literature on Ragusa/Dubrovnik and derives from it a number of common hypotheses for potential quantitative testing. Section III focuses on the story of long-term economic evolution and success; it starts with a reclassification of historical periods based not on diplomatic events but on economic phases, then goes on to test five hypothesis on economic success with the data set created. Section IV turns to the quality of institutions using currently popular concepts, and undertakes limited quantitative testing of relevant hypotheses for three areas: financial prudence; ease of doing business, and effective Rule-of-Law. Section V summarises the findings and points to areas of further research.

Two clarifications are in order. First, we generally use the Latin name Ragusa, as Dubrovnik was then known. Second, we do not claim Ragusa was the only example of a prosperous city state with sensible policies, indeed we accept the view of some scholars that a lot of Ragusa's wise policy was an emulation of -with perhaps improvement upon-those of its main rival and overlord Venice.

II REVIEW OF RAGUSA’S HISTORY 1100-1800

The historical literature on Ragusa exhibits a considerable consensus that despite its small size and limited natural resources, it was one of the most successful states In the eastern Mediterranean, with volumes of shipping, trade, level of wealth, architectural and cultural achievements, disproportionate to its size. Innumerable authors over the centuries have attributed its success to effective governance based on a political regime of republicanism that may not have been democratic but relatively fair and benevolent providing pioneering social provisions like education, health care, quarantine systems, and provision of grain reserves for times of shortage. To this was coupled a generally liberal, open economy, with prudent state finances, limited market intervention, and encouragement of private enterprise. The Croatian economic historian Vladimir Stipetic (2000, p.24): captures this nicely in a recent article “Dubrovnik traded like Hong Kong, Singapore, Taiwan …but did so some five hundred years before ..[and like these
countries] became prosperous ..because of their adopted economic policy . This characterization suggests the label of the “Adriatic Tiger” of yesteryear, an early example of a small open economy with strong fundamentals and outward orientation.

The voluminous literature on Ragusa is almost entirely the work of historians, and generally contains little statistics, most interpretations based on written evidence in archival works or contemporaneous writers. When data are shown they are fragmentary, illustrative, lack long-term continuity, rarely in tables or charts. We have culled statistics from the literature, systematized them as much as possible, and used them to analyze this important historical case. Several recent works by Croatian scholars do use a quantitative approach, with careful data collection, sorting out unreliable estimates, and presenting the most solid ones to complement qualitative analysis. The earliest is the time-series population estimate in Vekaric (1998), then a partial but careful and very useful estimate of GDP in Croatia 1500-1900 by Stipetic (2004), and Zlatar’s (2007) analysis of private credits in 16th-17th century. Some use of data on legal institutions can also be found in Ravancic (2010), and in several studies by Lonza (1997), (2002); the later quantifies court procedures in a way broadly analogous to indicators of the World Bank’s Doing Business Reports. Lonza’s numbers and others culled by fragments in various works, will be used in Section IV.

This paper adds to such research; using data from some of the above works, and adding a large amount of new data we are able to create time-series estimates for about the period 1300-1800, allowing longer-term analysis of Ragusa’s evolution. Data on shipping-fleet numbers, carrying capacity, are particularly important for this, as they have a high correlation with both population and GDP for later years, but are available much farther back. We turn now to a review of the historical literature.

II (i) Timeline of Historical-Political Development

The first “records [of] Dubrovnik’s arsenals (shipyards) date from the year 782,” which is broadly consistent with the consensus that Ragusa was founded as a significant settlement by the 7th century, allegedly by Greek-Italian denizens fleeing from the 639 Avar invasions of Epidaurus (Cavtat). As for all early history, there is a mixture of myth and fact, which Carter (1972), and Stuard (1992). inter alia try to sort out But even the assessment noted in Wikipedia that "from the 11th century Ragusa emerged as an important maritime and mercantile city", is a view widely shared by contemporary and modern writers. In 1153 Andalusian geographer Idrisi wrote: “Ragusa was a large maritime town whose population were hard-working craftsmen and possessed a large fleet which traveled to different parts.” (Carter, 1972, p.74). In 1553 Giustinani noted its nobles had fortunes far in excess of other Dalmatian cities, and comparable to the

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73 The correlation values of ship tonnage for 1500-1800, are: 0.536 with GDP and 0.884 with Population, as calculated in Havrylyshyn and Srzentic (2012)
74 Nicetic (2002, p.11)
Venetian elite, with “many individuals having [wealth] of 100,000 ducats and more”\textsuperscript{76}. Stuard (1981, p.808) notes Shakespeare’s term Argo sy in Merchant of Venice incorrectly implies these were Venetian ships, but, other English writers of the time explicitly noted its greatness, as Pepys in his Diary: 1660-69: “a small country, but it is said older than Venice”\textsuperscript{77}. The renowned 20\textsuperscript{th} century economic historian of capitalist development, Fernand Braudel, labeled Ragusa “the Jewel of the Adriatic”.

While some historians claim for Ragusa a uniqueness as an independent Republic with relatively democratic procedures and more benevolent attitudes to commoners in the region,\textsuperscript{78} in fact, de jure it was usually in a suzerainty, tributary, or protectorate status under one or another of the larger powers—but de facto it was certainly quite autonomous in its internal governance and external commerce for the better part of a millennium, justifying its motto LIBERTAS\textsuperscript{79}. Just how much more democratic and benevolent it was is debatable, and we address this to some extent in Section IV; here we briefly summarise the main phases of its history. Historians vary somewhat in classifying the periodicity in Ragusa’s existence as a Republic, but a broad consensus gives the following periods.

- **The Byzantine period about 8\textsuperscript{th}/9\textsuperscript{th} century to 1204**: Ragusa was mostly under Constantinople’s suzerainty, with periods of submission to Venice, Hungarian kings, Normans in Naples, and even some years of independence. But it enjoyed considerable autonomy and enough neutrality to have trading rights with all sides.

- **The Venetian period, 1204 to 1358**: Ragusa accepts formal submission to Venice, a Republic at least 10 times larger, and a far more powerful naval fleet. Venetian Counts formally were heads of state, tribute was paid and in war it contributed one vessel per thirty Venetian ones. In return it retained internal autonomy and importantly was allowed the valuable privilege of trade intermediation between the Balkans and Venice. Paradoxically during this period Ragusa became a significant rival of Venice in Mediterranean trade.

- **Hungarian suzerainty, 1358-1526**: Ragusa falls under dependency of Ludovik I after he drives Venetians from most of the Dalmatian coast. In the middle of the 14\textsuperscript{th} century, under the 1358 Treaty of Zadar, But the Hungarian kings were content with inland superiority over Venice and not interested in Mediterranean trade, allowing full trading rights to Ragusa.

- **The Ottoman period: 1526-1684** brought a new protectorate status under The Porte after the Hungarian defeat at Mohacs. But under the loose control of Hungary, formal relations with the Ottomans began much earlier. The first treaty was in 1392, with expansion of its terms in 1397 to fully free-trade in Ottoman regions, and yet another treaty in 1459 after Turkish occupation of Serbia.

\textsuperscript{76}Krekic (1997, p.193) Well-paid sailors could earn a few hundred ducats yearly, captains 3-4 times.

\textsuperscript{77}Reference given by Basic (2006, p. 152). Both Oxford and Webster’s clearly define Shakespeare’s “argosies with portly sails” as ships of Ragusa.

\textsuperscript{78}Havrylyshyn and Srzentic (2012) discuss these claims.

\textsuperscript{79}Kuncevic (2010) elaborates on the reality and myth of LIBERTAS.
well-remembered defeat of Serb forces at Kosovo Polje in 1389, and Ottoman’s crowning achievement with the fall of Constantinople in 1453, clearly signaled the need of Ragusa to deal directly with the Porte despite its formal dependency on Hungary.

- The Austrian period, 1684-1806 was a faint echo of the earlier periods. Ragusa retained considerable autonomy particularly for Balkan trade, however diplomacy was decreasingly effective as Ragusa’s economic strength had been sapped by the overall economic decline of the eastern Mediterranean. Some interpretations suggest Austrians did not seek firmer authority over Ragusa (now mostly called Dubrovnik) because its relative commercial importance was much reduced.\(^8^0\).

- French occupation in 1806 ends independence of Dubrovnik, not just de facto, but de jure. During the Austrian-French wars too weak to use its earlier diplomatic efforts to retain neutrality, it surrendered to overwhelming French forces and lost Republic status. With Napoleon’s defeat the 1815 Congress of Vienna returned Austrian control over Dalmatia, but not Dubrovnik’s city-state privileges\(^8^1\). By 1900 railroads had further undermined Dubrovnik’s advantages. It became part the South-Slav Kingdom in 1918 as a much reduced maritime power, though increasingly an important tourist destination, designated as a UNESCO World Heritage site in 1979.

II (ii) Common Hypotheses on Ragusean Economic Prosperity

While the literature is virtually unanimous that Ragusa was extremely prosperous despite its very small size and poor resource base, authors vary somewhat on the question of the when, how, and why of this success. From such traditional discussions we derive a number of common economic hypotheses (HH), then use our new data-set to test them\(^8^2\). The first five are related to economic evolution - or WHAT happened- and will be analysed in this section. The other five concern the “good institutions” that historians note as the explanation for Ragusa’s economic success- or WHY it happened; these are taken up in Section IV.

HYPOTHESES ON WHAT HAPPENED

- **HH1: The Golden Years of prosperity were about 1350-1550.**

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\(^8^0\) “Relative” is the operative word here: In Sec III we show data suggesting absolute level of economic activity might have been still very large.

\(^8^1\) This lends truth to the assertion by Luetic (1969, p107): “the French occupation…overthrew the 1,000 year historical thread of Dubrovnik’s sea-based livelihood, and destroyed the significance of Dubrovnik as a world-class maritime power.”

\(^8^2\) The statements for each of these hypotheses are not to be found so explicitly in any earlier studies, but are our own interpretation of the consensus, or in some cases like HH2 our proposal to add a new nuance to the historical writings.
• **HH2**: The preceding Silver Period was economically also very dynamic\(^83\),

• **HH3**: The carrying capacity for population was very limited, well under 100,000,

• **HH4**: The commercial fleet of Ragusa at its peak equaled that of Venice, and exceeded that of England. (we call this the “patriotic hypothesis”)

• **HH5**: Ragusa’s decline began with the discovery of The Cape of Good Hope route in the early 16\(^{th}\) century.

**HYPOTHESES ON WHY IT HAPPENED**

• **HH6**: The State conducted very prudent and conservative financial policies, avoided budget deficits, debts, inflationary debasement

• **HH7**: State laws, regulations, institutions were favorable to commercial activity

• **HH8**: Rule-of-Law was established early and effectively and fairly implemented

• **HH9**: Enlightened social policies provided for basic needs of the entire populace

• **HH10**: Ragusa had very low military-naval expenditures, relying on diplomacy for its achievements.

**III TESTING COMMON HYPOTHESES ON ECONOMIC EVOLUTION**

Virtually all histories of Ragusa are structured on historical political models, with period classifications as above dependent on key events: wars, victories, treaties, regime changes. Given this paper’s focus on economic evolution we propose a classification based on the nature of the economic development shown in Table 1 with approximate dates.\(^84\) For all but the last of these periods we test the five “what happened” hypotheses using quantitative indicators as available, and complementing the analysis with other fragmentary statistics or qualitative assessments from the literature.

But first consider as a broad overview an indicator which may differentiate the relative economic dynamism of each period. A chart in Carter (1972) listing the major monumental buildings in the city from the 9\(^{th}\) century to 1877 is used to create Figure 1, showing for each period the absolute numbers, the share of the total, and a crude index of building intensity (=number of buildings per 100 years)\(^85\).

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\(^{83}\) In fact most historians do not give special importance to this period, with possible exception of Stuard (1975,1992); we take the liberty to make it a more explicit hypothesis than she does in her many works on this period.

\(^{84}\) The rationale is explained in Havrylyshyn and Srzentec (2012)

\(^{85}\) This may underestimate the number in later periods since it shows only buildings within the city walls, and territorial expansion over time likely meant more major building projects outside as well.
## TABLE 1. CLASSIFICATION OF ECONOMIC PERIODS

<table>
<thead>
<tr>
<th>Economic period</th>
<th>Year</th>
<th>Nature of Economic Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundational Period</td>
<td>To 1100</td>
<td>subsistence agric, fishing, short-distance maritime trade</td>
</tr>
<tr>
<td>Silver Period</td>
<td>1100-1350</td>
<td>above +: hinterland trade esp. Balkan silver, other minerals, + Adriatic entrepot trade</td>
</tr>
<tr>
<td>Golden Years</td>
<td>1350-1575</td>
<td>above + increasing long-distance Maritime trade mostly to Levant</td>
</tr>
<tr>
<td>Cape Hope,</td>
<td>1575-1750</td>
<td>Levant trade gradually lost to W.Europe competitors, efforts to trade in West Med. &amp; Atlantic</td>
</tr>
<tr>
<td>Gradual Decline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revival Interlude</td>
<td>1750-1806</td>
<td>Balkan trade continues, hire-out ships, sailors to new big powers</td>
</tr>
<tr>
<td>Post-Independence</td>
<td>1806-1900</td>
<td>decline sharpens, maritime activity Undermined by railroads; late-19th.c beginning of tourism-economy</td>
</tr>
</tbody>
</table>

Source: Authors’ classification

Taking this at face value - the numbers already provide a test of \textbf{HH1 that the Golden Years 1350-1575 were indeed the most prosperous}, with the largest number of buildings, the highest share by period and the highest per century intensity. The foundational period shows a start but still very modest. However, perhaps most interesting in this chart is how large a share of the major structures were put in place in the Silver period, with an intensity of building far greater than the late periods and second only to the Golden Years.

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**Figure 1:** Principal buildings in Ragusa by period 9th-19th century
Most histories of “The Adriatic Jewel” justifiably focus on the late 14th to late 16th century as the period of greatest prosperity. We propose a new interpretation be added - the preceding Silver Period was economically also very dynamic. Some data we present is consistent with this, suggesting that the prosperity of the Golden Years came on top of a very strong buildup in the Silver period. The values in Figure 1 reflect the subsequent decline in the 17th and 18th century, with a far lower number of buildings, smaller share and intensity. There were none in the brief revival, and only a few more in the post-independence period. Consider now developments in each of the economic periods.

**III (i) Foundational period - to 1100**

There is a broad consensus that in its early years the economy was very simple, largely self-sufficient, based on fishing, some agriculture, building of small craft. This was nevertheless an important period in building the foundations of future prosperity and dominance in Dalmatia. One sees a gradual movement into nearby coastal entrepot trade, as well as intermediation between the Balkan hinterland and thriving Italian cities like Venice, Florence, Bari, Ancona. With the first shipyard already in 782 -within a century of its founding- Ragusa was clearly already moving beyond local fishing into maritime activities. Early documentary mention of its shipping prowess notes that in 783

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86 Several works of Stuard imply such a thesis—we suggest it be made explicit in the literature. Those who have studied the Industrial Revolution will recall the later partial revision of economic history showing that it was preceded and made possible by an earlier agricultural revolution and attendant growth.
Charlemagne hired Ragusean ships to transport Croatian and Serbian mercenaries across the Adriatic in his campaign to drive Saracens out of Apulia\textsuperscript{87}.

Another indicator of an early economic development was its ability to withstand for 15 months the 866 Saracen siege until Byzantine ships lifted it - indirect but strong evidence that: 1) Ragusa was worth seizing, and 2) defenses were already quite strong.

The literature contains numerous accounts of caravan trade between Balkans and Italy through Ragusa well before 1100. Resources like cattle, leather, wood/lumber, honey, wax came from the Balkans, to be traded for textiles, household goods, metal products, and various luxuries from Italy. The share of this Balkan-European trade in Ragusean economy varied in importance over time as the products changed, and in later periods maritime entrepot trade in the Adriatic, Mediterranean and with the Levant and elsewhere became far more important. However, throughout Ragusean history, the Balkan trade remained a significant component of its income.

III (ii) The “Silver” period (1100-1350)

The 13\textsuperscript{th} century saw a boom in minerals trade as mines opened and expanded in hinterland (Srebrenica, Novo Brdo, Rudnik). The main item was silver, but other minerals (gold, lead, iron, etc.) also played a role\textsuperscript{88}, as did salt exports. Stuard (1975-76, 1981, 1992) describes how Ragusa quickly became a principal conduit meeting the high demand for silver in Europe; Stipetic (2000, p.26) states Balkan silver production about 1400 was almost one-third of European totals, and of this almost one half (i.e. about 16\% of European total) was exported through Ragusa. He also contends that required sales to the Ragusa mint provided the basis for a considerable amount of seigniorage profits for the state treasury. The silver from hinterland was brought by caravans to Ragusa and then shipped for sale to Italian city states, Florence, Venice, Genova etc. The return voyages would bring textiles, luxury clothing for Balkan nobles, jewelry, glass, and other manufactures. This is most comprehensively analyzed by Stuard (1975-76). It is significant that the earlier Balkan trade in raw materials continued, though silver and other minerals proved much more profitable, providing a big boost to the Ragusa economy, including the local development of silver and goldsmithing.

The new hypothesis we proposed based on Stuard, \textbf{(HH2) that the Silver Period was economically very dynamic} was already confirmed by Figure 1, but one can also see that data for area, shipping, and probably but unverifiably in population. (Figures 2, 4) is also consistent with the hypothesis.

\textsuperscript{87}Carter (1972, p.53), based on writing of the Byzantine Porphyrogenitos—though Carter warns in many places such early writings probably had many confusions.

\textsuperscript{88} Often the location names define the mineral: e.g. Srebrenica for silver, Olovo for lead, but Rudnik simply mine.
An important development in this period was the recognition of Ragusean merchants, elites governing authorities that greater benefit would come from Balkan-Italian trade not only with land caravans, but also transporting the goods in both directions by Ragusean ships. Already in the 14th century one finds discussion of a burgeoning maritime trade rivalry with Venice, Ragusa's nominal suzerain; a rivalry that we show increases substantially in the next period. There appears to be already a big jump in the commercial fleet size, with a probable doubling from about 22 long-distance ships in 1300 to 40 by 1325 (Figs. 3)\(^{89}\). The same trend is also evident in Fig. 4 on Tonnage, as is the indication that merchant fleet, while lower than that of Venice was not far behind. Such indicators further support the proposition that the Silver Period saw a significant buildup of the strengths that led to the prosperity of the Golden Years.

**III (iii) The “Golden Years” of maritime prosperity (1350-1575)**

This period is almost universally recognized by scholars as the apogee of Ragusean economic prosperity. The Republic's population reaches its maximum in 1500 of about 90,000 (Figure 2), as does per capita GDP (Figure 3)-though we raise some doubts about this later. The fleet size grows sharply (Figure 4, from the 40 noted in 1325 to 200 by 1575, and tonnage even more substantially (Figure 5), with average ship size seeing a sharp increase\(^{90}\). All these confirm HH1: the golden years of maritime prosperity came about 1350-1550/75. We use 1575 as the end-date based on the peak value of shipping tonnage.

On population, Vekaric (1998) argues much of the expansion prior to 1500 was due to Balkan-Slavic refugees fleeing advance of Ottomans. However, economic attraction also played a role: there is little doubt the level, of per capita income in Ragusa was well above that of the immediate Croatian hinterland (Figure 3). A more intriguing hypothesis stated in Vekaric (1998) concerns the strong decline from 1500 notwithstanding the strong growth of shipping activity. He attributes some of this to renewed episodes of the plague, but also to the “correction” of the earlier refugee boom, arguing that the peak population was far beyond the very infertile territory’s carrying capacity and was unsustainable. If indeed shipping activity is taken as a good proxy for otherwise unavailable economic activity data, one must tentatively conclude that Ragusa’s aggregate GDP continued to grow, and population decline cannot be attributed to economic decline. Subject to further analysis, it follows the Vekaric explanation for population decline is the only logical one. Hence, we tentatively confirm HH3 that the carrying capacity for population was very limited, well under 100,000. It would

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\(^{89}\) These figures are less certain than for later periods (hence a dashed-line in Figures 3 & 4), and no reliable estimates are available for earlier years, but the trend and dynamism seems clear. Table 3 in the Data Appendix elaborates.

\(^{90}\) Luetic (1969), S. Vekaric (1954), and Nicetic (2002) all emphasize the constant expansion of capacity over this period.
seem useful for future research to ask how this decline occurred: was it emigration, and if so to where? was it non-replacement by immigration of natural (or plague) mortality?

**Figure 2: Population and area: Ragusa 1300-1800**

![Population and area: Ragusa 1300-1800](image)

Source: Appendix tables in Havrylyshyn, O. and N. Srzentic. “Economy of Ragusa, 1300-1800 The Tiger of Mediaeval Mediterranean”, 2012

**Figure 3: GDP per capita Ragusa and comparators (in 1990 USD)**

![GDP per capita Ragusa and comparators (in 1990 USD)](image)

Source: As for Figure 2

**Figure 4: Number of ships: Ragusa and Venice 1300-1800**
The new, additional basis of prosperity in this period now becomes maritime trade intermediation, not only throughout the Adriatic but increasingly with the Levant territories under Ottoman rule bringing goods from the Far East such as spices, silk, oriental perfumes, grains, and other raw materials. But the commodity structure of trade with the Balkans continued to be quite similar to that in earlier periods and there is little doubt that the strong preceding experience and the extensive slavicization of Ragusa/Dubrovnik, provided a critical comparative advantage. It is a tribute to the governing elites of Ragusa—both nobility and merchants—that early on they leveraged their economy on this comparative advantage which provided the capital, skills and experience to capture so much new maritime trade in the 15th and 16th centuries. Thus the economy in this period was based largely on entrepot trade services including shipping profits and value of the direct and indirect labor services. One also begins to see Ragusean sailors and officers hiring out to foreign powers—though this becomes much more important in the decline period. Thus Lane (1973, p.425) notes that as Venetian dominance declines in 18th century “shipmasters were no longer Venetian … [but] mostly Dalmatians with Slavic names”.

Source: As for Figure 2
That domestic production probably accounted for a quite small portion of value-added cannot be verified quantitatively—even for England and western Europe GDP estimates only go back to late 18th century—but the qualitative analysis make clear this was so. Apart from very small amounts of grains (at best one-third of needs according to Carter and others) some wine, olive oil and market garden products, salt exports, there were but a few manufacturing activities. The only important ones were ship-building, gold and silver-smithing, with jewelry exports to Balkans increasingly coming from domestic production not just imports from Italy. Shipbuilding had always been largely local (recall reference to first arsenal in 792) but in this period it becomes very significant and includes sales outside Ragusa, based on the reputation of high-quality that many contemporaneous writers noted.91

This was the period in which Ragusa became, as a prominent American historian of Venice, Lane (1973, p.379, p.381) notes “Venice’s most damaging competitor...bidding cargoes away from the Venetians on all seas, even in the Adriatic...[as] their ships were increasing in number and size”92. Other accolades include claims of Ragusean equality with Venice, based on fleet size and tonnage about 1575 (Figures 4 and 5). As Figure 6 shows, at this time the English fleet was still only about the same size93.

91 Havrylyshyn and Srzentic (2012) cite numerous such references.
92 This is also reflected in the work of Fernand Braudel who writes of Ragusa’s ability to “snatch away goods from under the eyes of Venetian merchants” as cited in Stuard (1992)
93 Some historians claim before mid 16th century Ragusa’s fleet exceeded that of England; we were unable to find hard evidence before 1575.
However, HH4, the “patriotic” hypothesis of equivalence with Venice is perhaps exaggerated, for over these centuries, equivalence only occurred when Venice had lost numerous ships during wars. It is clear in the figures the Venetian fleet had far larger numbers in the 14th century, falling sharply with the many wars with Genoa. Both in defeat and victory, many ships were destroyed, then the fleet was rebuilt to even higher levels about 1425 (over 300 ships), then once again declined as many wars -now with the Ottomans- again decimated the fleet. Ragusa’s neutrality and Ottoman privileges spared its fleet, so that at its peak in 1575 with about 200 ships and peak historical capacity of 33,000 tons it was technically “equal” to Venice -as was also true about 1400.

Of course, to affirm that over the long-term Ragusa did not quite “equal” Venice should not be a surprise or a negative commentary: Given its much smaller size and territory, with poor fertility, the fact that Ragusa “La Città Felice” could be put in same league as “La Serenissima” is already a strongly positive characterization.\(^\text{94}\)

**III (iv) Vasco da Gama rounds Cape of Good Hope, Ragusa (gradually) declines (1575-1750)**

Historians almost universally agree the peak of Ragusa’s importance was about 1550, then began a decline due to the shift of economic dynamism to Western Europe, and the related opening of the Cape of Good Hope eastern route. The decline is reflected in values for population (Figure 2), GDP and GDPpc (Figure 3), number and tonnage of ships (Figures 4 and 5). The Italian city-states also declined; for Venice, Lane (1973, p.384-6) refers to the “The Collapse”. However, our data suggest this decline was not so immediate. After Vasco da Gama established a colony in India in 1503 and the first spices are brought to Europe by Portuguese ships in 1506, Ragusean shipping capacity continues to expand until at least 1575. This long period of continued competitiveness hints at another hypothesis common in modern studies of global shocks: that small, open, and institutionally flexible economies have great resilience, and are better at mitigating external demand shocks.

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\(^{94}\) Arguably, the lack of a large and fertile hinterland should not matter, as resources can be imported. But in mediaeval period this with many famine episodes, states often forbade food exports; with long travel times, size mattered. Larger size also provided a labor force: sailors, soldiers, chandlers. Venice was in this sense far better endowed than Dubrovnik.
The enormous growth of Western European naval powers (Portugal, Spain, then Netherlands, England) is particularly clear in Figure 6. While in 1575 England’s fleet tonnage was about the same as in Venice and Ragusa, and that of the Netherlands a “merely” 3-4 times larger, after 1600 both of these move into exponential growth, with both Adriatic cities falling far behind. This creates an eventually unbeatable competitive force for Ragusa unlike the earlier rivalry with Venice which it was able to outcompete because of advantages in Slavic lands and skilful diplomacy with the Porte and the Pope.

The new competition was unbeatable for two reasons. Western European markets for which Balkan resources are insignificant, soon surpass those of Italy. Ragusean authorities and merchants undertook efforts to move into these markets, with some success for a few decades, but not enough to prevent an eventual decline. Second, even with the privileges granted by the Porte, for eastern trade via the Levant, this becomes far too costly compared to the new sea route around the Cape. Again, Raguseans made efforts to compensate, by providing shipping services to western powers, (ships were re-based, at first mostly to Spain) and perhaps most important individuals hired themselves out to the new western fleets –maybe the first significant episode of Dalmatian’s famous quest of “truhom za kruhom” (loosely translated as following your stomach in a quest for bread). In addition some attempts were made to engage in trans-Atlantic trade, but again with limited success95. All this helped mitigate the decline, but in the end was not enough to keep the glory-days alive. Thus preliminary tests confirm HH5 that the rounding of Cape of Good Hope did not immediately lead to Ragusa’s decline, though with a long lag it was the key factor. One could argue further the diversification efforts succeeded in delaying the decline, and giving

95 Several articles in Filipovic and Partridge (1977) discuss this, including: Luetic, Filipovic and Zivojinovic
continued growth almost a century after Vasco de Gama, which in a limited way is consistent with the resilience hypothesis.

Much of the preceding analysis is based on shipping tonnage data (Figure 5) which is noted appears to be the best available proxy for economic activity. One sees indeed a slight decline from 1475 (29 tons) to 1550 (24 tons), but a strong rebound to its peak value in 1575 (53 tons), after which it declines quickly. Note the same trend is seen for Venice, which also suffered from these two new competitive factors. Carter (1972, p.352-3) summarizes earlier arguments of Libyer and Lane for Venice and Marinkovic for Ragusa: “trade of Dubrovnik and Venice was not halted at the Levantine ports…but was carried by merchants of these Republics as far as Goa and possibly even Malaca and Batavia at a period when Portugal was supposed to have a ‘monopoly’ of the spice trade.” Thus, the efforts by Raguseans (and Venetians)—e.g. establishing a trading colony in Goa, diplomatic efforts with the Ottomans to maintain the sole rights of spice trade in Alexandria—succeeded for some time.

III (v) The short revival period (1750-1806)

After the decline from 1575-1750, a short revival occurred, not in population, but in the size of the fleet (Figure 4), though the average capacity probably fell. This revival does not seem to be given much attention by historians, either because it is not clearly understood, or perhaps because by this time the uniqueness of Ragusa /Dubrovnik has long passed and academic interest in the later periods is not as great.

The analysis in this section has allowed some testing of the common hypotheses, or interpretations, of the traditional historical literature on Ragusa/Dubrovnik. But unsurprisingly, inevitable imperfections and non-availability of data leaves a number of unresolved issues. We note as possible topics for future research two puzzles.

First, since tonnage continues to rise until 1575, indicating economic expansion, while population declines, this may indeed have been as Vekaric(1998) argues due to a limited carrying capacity. However, it is then useful to investigate where the population went to: emigration, unreplaced mortality, plague? Related to that is a question of how was the peak of 90,000 in 1500 sustained? Conceivably by imports paid by growing wealth, also possibly by refugees temporarily populating infertile rural regions but living at the margin. A second puzzle concerns the decline of GDP per capita from about 1600. That aggregate GDP would fall in the decline period is understandable—but as population declined sharply, could it be per capita income did not? This is even more of a puzzle for the revival period where, as population continues to decline there

96 Luetic (1969 m) and other fleet estimates generally agree on this.
occurs a sharp revival of tonnage about 1775-1800 to levels nearing the peak of 1575; why is this not reflected in a revival of per capita income but continues to fall?.

IV ASSESSING THE QUALITY OF INSTITUTIONS

IV (i) Overview: Ragusa’s Main Institutional Strengths

Our quantitative hypothesis tests above have broadly confirmed the strong consensus in the historical literature that Ragusa was indeed economically very successful in these centuries. Despite its small size and limited natural resources even for basic staples, it rivaled or at least approached the prosperity of much larger Italian city-states like Venice, Florence, Bari, Ancona. This is manifested in measures of the wealth of its elite, the apparent wide extent of its trading activities, and is confirmed by data on the size of its shipping fleet (Figures 5&6), until 1600 being in the same league as top maritime powers like Venice, England and Netherlands. While on this there is little dispute in the literature, what makes the history more interesting is differences about what explains its success, the various answers to the central question: how could such a tiny entity do so well? The book of Carter (72-p. 550) is typical of historians efforts in its aim to show “how a small republic with few natural advantages could grow and develop mainly through her function as a trade and political intermediary between the underdeveloped regions of the Balkans and Levant, and the more developed regions of western Europe.”

Reflecting the main categories of explanations given, we rephrase the question as follows: was Ragusa’s economic success due to luck of location, naval power to control commerce, or wise policies? This section will attempt to show that while luck may have played some role in very early years, naval power was not a large factor -certainly far less important than it was for major entities like Venice, England, France, Spain, Netherlands- and that the main differentiating factor was wise policies, that is good governance, favorable institutions, skilful diplomacy. As in Sec. III, we will rely on both qualitative evidence, and add to that a certain amount of data on the quality of institutions. Unsurprisingly such data is even softer than the proxies for economic activity used above, but this should be put in context. Even current measures of institutional quality must be put in the “soft” category, much of it being based on expert opinion rankings rather than any natural metric. If anything it is surprising that we were able to cull even as much indirect data proxies for institutions as we have –and

97 Stipetic (2004) shows a modest increase 1550-1575, then a decline. But later values in Figure 2 are based on the vaguer estimates: he gives only values for all of Dalmatia, we assume earlier proportions—which may be incorrect.

98 Kaufmann and Kraay (2003) provides a good review of institutional data problems today, as well as the important argument that subjective rankings of experts may sometimes better capture effectiveness of institutions (e.g. degree of corruption) than formal measures. (e.g. existence of anti-corruption laws or committees is not as meaningful as the opinions of business people about extent of corruption.)
this just from secondary literature without fresh archival research.. Nevertheless the findings below must be considered more tentative than those of Sec. III.

We have grouped the many different reasons given in the literature into the following main themes:

- Luck of location
- Openness and secularism
- Good governance including sufficient representation of interests of all elements of population to achieve political stability, and further, provision of and investment in physical infrastructure (roads, water supply, sanitation, weights and measures regulations, etc.)
- Prudent fiscal and monetary policies, a relatively stable currency
- A good “business climate” – akin to the modern notion underlying the now-well-known Annual Reports of the World Bank on the “Ease of Doing Business Rankings” (EDB)
- Effective and fair “Rule-of-Law (ROL) - commercial ROL being also part of EDB
- A “sufficiently fair” social policy: to ensure social stability and reliable labour force; the ruling nobility avoided oppression and provided various benefits for the wider populace, including public health measures, safety regulations for housing, fire, sanitation, provision of food reserves for periods of regional famine, and social infrastructure like hospitals, pharmacies, and schools.
- Minimal military expenditures with maximum diplomacy aimed at maintaining Ragusean “LIBERTAS” and thus keeping open trading channels

We give the most emphasis to fiscal prudence (IV.ii), favorable commercial climate or EDB (IV.iii), effective ROL (IV.iv), A “fair” social policy (IV.v), and the trade-off between military expenditures and diplomacy (IV.vi). But before turning to the details of these factors, consider briefly the issues of location, openness, and general governance.

Location

Many historians emphasize Ragusa’s location at the edge of the Christian and Muslim worlds, noting that by sea it was close to thriving Italian cities and kingdoms, but by land immediately adjacent to Balkan lands occupied by the Ottomans starting in the 14th century. Carter (72, p.135) reviews but disagrees with these arguments Miovic (2010) reviewing the 1440 book on Ragusa by Filip de Diversis points to the chapter “De bono situ Ragusii” (The Good Location of Ragusa) its politically favourable geographical location between Christian and Muslim world, on the edge of Balkan hinterland, also on the sea routes eastward, and its allegedly ample water resources. This last seems overstated given the clear evidence of huge efforts to provide water by viaduct from then-long distances to the Ombla River. But most historians even if they do usually note location as a factor, emphasize much more the other explanations noted above. This seems reasonable, as Ragusa was not the only possible intermediary on the Adriatic Coast, and had far poorer “natural” advantages in terms of productive
lands, easy water supplies. Indeed many coastal areas like Kotor or Ulcinj to the south, and Split, Zadar to the north had similar location, probably better natural resources, including even larger quiet harbors. All were also trade intermediators competing with but never attaining the prosperity of Ragusa. In sum, it is entirely logical to say that without the luck of such a location, Ragusa would not have prospered, but it prospered more than other Dalmatian sites due to other factors, primarily wiser policies to leverage the location into greater prosperity than local competitors. This may accord well with the view of Machiavelli (xxx, -translation 1996, p.8) who briefly points to Ragusa as an example of his thesis that the ideal site for a city: “it is better to choose sterile places for the building of cities so that men, constrained to be industrious and less seized by idleness, live more united, having less cause for discord, because of the poverty site, as happened in Ragusa.” In sum we would argue that location was at most a necessary, but far from a sufficient condition.

**Openness**

On the greater openness and secularism of Ragusa Stavrianos’ treatise on the Balkans (1966) underlines the anti-westernism of Balkan culture in the mediaeval period, noting “the one exception…Ragusa…[where] we find an entirely different civilization-secular, sophisticated, individualistic, and maintaining close ties with the West.” This is doubtless a fair characterization, but still falls short of an explanation of the greater openness and diversity of Ragusan society compared to the Balkan hinterland. First this begs the question *Why* was it more open and western-oriented than the hinterland? Further, Stavrianos does not explain why other coastal cities mentioned above, which were equally western-oriented and relatively urbane, remained economically less prosperous than Ragusa.

**General good governance**

If the World Bank’s Governance rankings were being done in the middle-ages, arguably, Ragusa would rate quite high. The now widely known concept of good institutions as an explanation of democratic and economic success, in fact has great relevance to understanding the prosperity of Ragusa. A typical assessment in the literature is that of Krekic (80), V,p.38:

[Dubrovnik]…remained always vulnerable [to] Ottoman occupation...This is why the government felt even the urge to resolve the daily problems and to improve the functioning of institutions. They knew that internal stability and economic prosperity were the only way to strengthen the international position of the city."

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99 De Diversis is far more colourful describing Ragusa’s openness and sophistication: “Raguseans, commoners and patricians, the sumptuous appearance of their wives, friars, government office-holders, domestics and servants, peasants from surrounding villages and their livestock, merchants from afar, Turks, Morlacs and pilgrims unroll before us. Hungarian Kings, archbishops, famous people...but also desperate individuals in search of their beloved ones, enslaved by the Turks.”
Using the modern-day jargon about good governance one can look at three components: voice, (VO), which we address immediately below - a favourable business-climate (EDB), and rule-of-law (ROL) which come in later sub-sections.

Ragusa was by no means a democracy, government roles being almost entirely in the hands of a hereditary nobility mythically based on the “original” settler families from Epidaurus, though in fact in early centuries many rich merchants and Balkan “nobles” were often quietly “ennobled” in return for the benefits they could bring Ragusa. As in Venice, eventually the nobility for self-protection imposed a closure (as in the Venetian “Serrata”) so that after the 14th. c. movement by rich merchants into the nobility was rare—but that the latter had great indirect influence is made clear in the literature, for example in Krekic (1980), Ch. XIX, who characterizes the regime rather nicely albeit somewhat sardonically as a “government of the merchants, by the merchants, for the merchants.” This crucial orientation to promote commerce may not only explain the good institutions we discuss later, but also the relatively benevolent position towards commoners, whose “voice” was of course not manifested in voting rights, but by participation in government bureaucracy by some rich merchants and skilled professionals and by the many social-policy efforts to support the wider population. It is widely agreed by historians contemporaneous and modern, that compared to most other states/nations in this period the nobility ruled with a relatively soft hand and even provided considerable support to meet the needs of the populace. Thus Grubisa (11) shows Ragusa was perhaps less open than the Florentine system of “democratic republicanism” (and thereby more stable, he contends), but it was far more concerned that the basic needs of the populace were met, than was the case in most regimes of that period such as the very narrowly-based republicanism of Venice. The Ragusan political regime might thus be most appropriately characterized as a benevolent rather than a rapacious oligarchy.

Most importantly as we elaborate further, the governing class generally meted out justice not arbitrarily in a feudal fashion, but on the basis of laws, legislation, judicial process, best symbolized by having a very early a constitution-like document—the 1272 “Liber Statutorum Civitas Ragusii” codifying earlier laws and informal practices. While many shortcomings in practice are noted by historians, numerous instance of well-applied justice in the law in practice are also found in the literature, reflecting the nobility’s self-serving but “reasonable” treatment of the lower-classes. ..Slsak (10) typifies the literature’s consensus when he argues this rule-based governance of the populace helped contribute to the long-term stability of the Republic, with virtually no

100 Vekaric (11), Vol.I shows in Table 7 the roots of the noble families; it is clear that a large proportion were not from Epidaurus. Illustratively, and indicatively of name roots is the case of one of the most powerful, the Sorgo (Sorgocevic). They were rich merchants from Cattaro in Albania, “rewarded by the Grand Council for bringing large amounts of sorghum and other victuals to Ragusa, at the time of the great shortages in the year 1292” (see p.68 for Italian original text.)

101 Many writers note that in very early years before about 1200, in fact “Agora democracy” did exist with assemblies of all citizens (The Laudo Populii) making key decisions. E.g. Carter 972-p.500)

102 We note on example using a quantitative review of 2,440 court cases, Lonza(02). She concludes large numbers of cases were settled out of court, a practice authorities encouraged.
significant peasant uprisings as seen frequently elsewhere, and far fewer internecine revolts within the elite.\footnote{The failed efforts of a revolt about 1402 and the short-lived and futile one by Lastovo island nobles being two major exceptions.}

For some historians even the extensive investments using Ragusan state finances to build churches and monasteries, was also a sign of good governance, and certainly in an age where this mattered much more, it could well have contributed to social stability. Marinkovic (07) details many such projects and emphasizes a point relevant to this paper: the hagiography, or naming of these churches followed “a strategy of spreading the cults of the city patron saints from the implicit demarcation (defence) towards a more symbolic sign of governing (control) reflects a tendency towards a more finely structured Ragusan government.”

The legitimacy of the nobility was to a large extent a myth but the other side of this coin was that it was not nearly as rigid in practice as in the law. Vekaric (11) and earlier others –Krekic (several works) Kedar (76), Carter(72)- document the shifts of noble lineage, the impoverishment of many noble families, and the rapid growth of wealth of non-noble merchants who were gradually and volens-nolens “absorbed” into the upper classes, the ruling elites, government officialdom. One quantitative indicator of informal upward mobility is the increase over time in the share of credit issued by commoners. Thus, Krekic(80) estimates for the years 1280-1440 this was about one third, while Zlatar (07-p.139) gives a value of 42%. An imperfect but striking statistic suggesting continued upward mobility is in Luetic(61-p.101), stating that by the mid-18th century, of 380 registered ship-owners, only 80 were of noble class.\footnote{This is not the actual share of the value just the number of people, hence it may overstate the role of commoners. In the Zlatar data, the size of holdings was higher for nobles; we have not found evidence for later years.} Indeed it is from the non-noble ship owners category that perhaps “the richest man in Dubrovnik” in the 16th c. arose according to Tadic (1948, p.143). Miho Pracatovic from the island of Lopud is recognized by most historians for his very great wealth but even more, as Krekic (1997, Ch.1, p.p.253-255) for his tremendous informal influence, symbolized by the fact that a monument to him was erected in the “sanctum sanctorum” of the nobility, the courtyard of the Sponza Palace. Another ship-captain from the island of Sipan, Stjepovic-Skociubha is considered in the same category. While Krekic dismisses as unlikely the story that he was offered admittance to the nobility but refused it, this deserves further consideration: Krekic is among the moist ardent on the problem of nobles falling into poverty, of nobles doing their “duty” assiduously by serving in government, as consuls, judges, officials.-yet does not make the connection that the latter caused the former. If so, then rich merchants would surely be wise enough to think twice whether nobility was worth more than wealth and the “eminence grise” influence it permitted. That upward mobility existed seems widely agreed; we emphasise further that it is also relevant to the arguments in IV.iii that there existed a good business climate.
Consensus in the literature is strong that Ragusa practiced a very prudent policy with respect to state finances, minting and debasement of currency, and market-encouraging regulations. Solid statistical evidence under this rubric in the secondary literature is available for only one very late period, about 1800, but not for the most relevant years. It does nevertheless provide evidence supporting Hypothesis 6, concerning fiscal and financial prudence, though one must ask about its representativeness. This was a period well into the post-1600 decline so there is no automatic reason to think it representative. But arguably, such a period of difficulties would more likely lead to deficits and indebtedness—the evidence of Figure 8 shows exactly the opposite as we will explain. Furthermore one can easily buttress threw argument by pointing to considerable qualitative evidence in the literature of financial prudence in earlier centuries.

Consider the relatively hard data in the extant set of complete budget numbers in the literature, taken from Bjelovucic (70.p44-45), which itself is based on a contemporaneous treatise the “Bara Bettera Memoirs”. The reliability is somewhat uncertain as the author does not specify for which year this is and seems to have made a transcription error, with the sum of expenditures exceeding by 30% (sic!) the total shown. The data (see Table A7 for raw values) is certainly strongly consistent with the fiscal prudence hypothesis, first in the fact of a surplus equal to about 10% of revenues, and second in the percentage allocation of its components as shown in Figure 8. Contemporaneous writers like Diversis and Kotruljevic, first noted the sensible financial stance of the Republic; recently Stipetic (00-p26ff) notes that “precise books were kept on the finances [of the state]” adding that prudence was ensured by “requiring the main officials in charge—registrars, clerks and accountants …must be foreigners;” [In addition]there was the institution of auditor with power of supervision of communal goods, a duty to investigate whether revenues are collected fully and expenditures are viable, not spent for unintended purposes.” They served five years when new ones were elected... Stipetic recognizes that the system was not perfect, indeed that building barns with doors implies horses do run out, that is corruption does occur. Krekic (97-p.32-5) notes the reality of bribery, but concludes that efforts to curtail it by punishing offenders were generally as effective as can be expected.

There is reason to accept the total, but question one item as hugely overstated: 66,000 Turkish piastres for missions to Pasha of Bosnia when the tribute to Istanbul and related costs was 48,320. We deduct from the former the amount of the excess in the sum, and calculate percentages as shown. Alternatively ignoring the summing error and taking % of component values, does not materially change the conclusions, only making the shares for diplomacy even higher.
The popular work of Reinhartt and Rogoff *This Time it’s Different* (2009)- meant in fact to remind us that the current recession is NOT that different from earlier ones over centuries- points to the fact that high debts and defaults were very common in European economies historically. In contrast, the historical literature on Ragusa we have researched so far does not give any specific instances of government debt defaults, and Fig.8 supports this view. In Dubrovnik about 1800, interest on loans was a mere 1.7% of expenditure. Perhaps equally important , it appears that all or most Government borrowing was domestic, either from the Zecca (the MINT) or the elites.- in Fig.8 the loans were said to be from Ragusan Brotherhods. In comparison recall Lane’s(73) estimate that at this time Venice paid out a third –and even more in earlier years-to service its debt .Kormer (95) analyzing about 25 kingdoms, principalities and city-states from 1500 to 1800 ( not including Ragusa), concludes that “service on the debt varied between 17 and 36% of total expenditures.”

**Figure 7: Structure of Ragusa budget about 1800.**

![Graph showing budget structure](image)

- **Sources:** Shares are calculated using absolute ducat values in Bjelovucic (1970, p.44-45)-see Tab.A7

In fact Ragusa’s net asset position was strongly positive with large amounts of deposits held in Italian banks and by 18th century in Vienna. On the revenue side , the dividends on such deposits (by the state only ) comprised an amazing 25.3 %. Recall Figure 6, which, though fragmentary, also confirms Ragusans held considerable private deposits in the “Monti” or Funds : of Italian banks. But while formal defaults may not have occurred , it seems likely that some instances of payment difficulties arose. Krekic in his many writings ,as well as others (Sisak(10) discussing the role and obligations of the nobility” , note that in this small noble group, it was a “social obligation” that services be rendered to the state not only in the form of time in political and bureaucratic positions, consular activities, but also by “sharing “ proportionately in lending to the state when
exigencies arise, or accepting less than full payment on previous loans. This is very much like the notion Reinhart and Rogoff (09) define as: "forced loans.", and Cipolla (86) describes for Italian city-states of the time as "imprestiti." This does suggest, if not defaults at least instances of fiscal stress.

The role of trading activities in providing state revenues is also evident, though customs revenues at 9.3% were far less important than various taxes on shipping—on shipbuilding, on sales of ships, on navigation—totaling 30.2%. The low customs revenue is evidence of the high degree of openness. Financial prudence is further seen in the not inconsiderable revenues of 6.2% from "selling" consular services abroad to others: since there were consuls in many places with knowledge of many languages, they were expected to sell their services to anyone for a fee, keeping part for themselves.

We discuss below the balance of military and diplomatic efforts, but here Fig.8 already presages confirmation of the common thesis that military expenditures were minimal (12.2%), while diplomatic costs were considerable—the first two categories, which add to a huge 42.8% of total expenditures.

Thus both the qualitative evidence on fiscal prudence in early centuries and the harder budget data of 1800 are very consistent with the hypothesis that Ragusan finances were generally strong, prudent, able to absorb shocks. Incidentally, Figure 8 gives numerical credence to the observation of Carter (72,p.535) about the enduring nature of this financial prudence—that even at the end, in 1806 after French occupation, "the state’s finances proved still to be in good condition in spite of all the troubles and the requisitions, and large sums were invested in Italian banks."

The literature gives a similar positive assessment of monetary and currency policy, low inflation and minimal metallic debasement, but so far we have been unable to find sufficient secondary data to confirm these views. Several writers note the "limited" devaluation of the Ragusan Grosso (Fig. 8a) and its minimal metallic debasement (Figure 8b.), and infer from this low inflation and sensible monetary policy. Krekic(80-p.252-3) emphasizes the relative stability of the Ragusan grossi, with an annual devaluation of 0.31% over 220 years from 14th to 16th century. The grosso was more stable than most others, for example the Florentine lira. Carter (72-p. 566) shows the dinar’s silver content falling from 916.67 grams in 1337, to about one third that in 1600, while Cipolla (86-p. 59) shows a debasement from 1300 to one quarter of the silver content in 1600. But Venice was even better—as Bachrach (73-p77) notes, the "international currency par excellence ... was the Venetian gold ducat [which kept its 1284] weight and fineness remarkably intact up to the end of the Venetian Republic."

To sum up, a very broad consensus suggests that Ragusa practiced very sensible prudent finances, conservative minting activity, and apparently avoided excess credit expansion leading to eventual crisis. That excess credit crises occurred elsewhere is well-documented—not only recently in Reinhart and Rogoff (09), but in many earlier writings. Lane(66.Chs.4,5,6) gives considerable detail for Venice. Defaults and financial crises are also very thoroughly described by Cipolla (86) for Florence in 15th century, using entirely modern monetary concepts: there was a credit boom, tight monetary policy (emissions) tried to contain this, an excessive credit squeeze ensued leading
to an economic bust. As a result of its prudence Ragusa appears to have avoided both serious budgetary and debt problems, and high inflation. However, the evidence to support these views is more qualitative than quantitative, and even the latter is very fragmentary, and incomplete. This leaves a very nice field of cliometric research open for economists and historians using the still little-explored wealth of harder economic data in the Dubrovnik Archives.

IV (iii) Evidence on ease of doing business

It is generally agreed that Ragusa’s government was strongly commerce and trade oriented, and the ruling nobility understood well this was the basis of their wealth. It would seem they also understood that it was necessary to extend this good business climate for commoners as well, which spawned a flexible and adaptive merchant class quickly able to react to demand changes or external shocks, seek new markets, adapt trade routes, change products. The frontispiece citation from Kotruljevic on institutions symbolises how this attitude was already well established by the 15th c. Historians’ writings contain innumerable references as well as illustrations of this business friendly environment which we review selectively below. But the first contribution of our paper is to cull and systematize from the literature some quantitative evidence that reflects the high quality of relevant institutions. Thus we start with Tables 2 and 3 which respectively quantify some admittedly “soft” data: the legal proceedings and their time-lapse for a handful of bankruptcy cases; and the share of notary entries for commercial and personal activities.

In Table 2 for a benchmark we note from the World Bank Doing Business Report (2013) that in 2012, the average time to complete settle a contract dispute (one of several indicators of the ease of doing business in modern analysis) the best was about 1.7 years for the OECD countries, the worst was 3.4 for the Middle East and North Africa region, and 3.1 for Croatia. For Ragusa in the 16th c. the available information gives a range of 1-3 years to complete a bankruptcy case brought to courts-a sub-category of contract disputes. True the sample is small, one has no idea how systematic it is (in both sources the information is only vaguely presented) start times and finish times are not always explicit or precise, and sometimes not stated at all. Hence our conclusion has to remain very tentative and conjectural. If however if the real time-range is double (1.5-6.0 years) this would still seem very efficient for the times, given realities of travel, documentation etc. In fact many of the cases shown here deal with Ragusan ventures in other countries/states, which even today complicate matters and generally add to the time required.
TABLE 2. ISOLATED CASES OF TIME FOR BANKRUPTCY PROCEDURES

RAGUSA 16th and 17th c.

(A common modern measure for ease of doing business)

<table>
<thead>
<tr>
<th>Year/Period</th>
<th>Nature of Case</th>
<th>Years To Final</th>
<th>Source</th>
<th>Time to start</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>BEST:OECD high y</td>
<td>1.7</td>
<td>&quot;</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>WORST REGION: Mid.East.N.Africa</td>
<td>3.4</td>
<td>&quot;</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>CROATIA</td>
<td>3.1</td>
<td>&quot;</td>
<td></td>
</tr>
</tbody>
</table>

**MEDIAEVAL RAGUSA CASES**

<table>
<thead>
<tr>
<th>Year/Period</th>
<th>Nature of Case</th>
<th>Years To Final</th>
<th>Source</th>
<th>Time to start</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec.1566</td>
<td>Nobles Sorgocevic&amp;Lukarevic Florence/Venice business bankrupts;Rag &amp; Italian creditors turn to Ragusa courts, some local assets frozen immediately-final decision May 1570</td>
<td>3.3</td>
<td>Tadic(48) pp.287ff</td>
<td>&lt;week</td>
</tr>
<tr>
<td>1577 (Sept??)</td>
<td>Joint business of Cveta Zuzoric&amp; husband Peshonija fails, immed. Put under oversight , claimants given 3 days to file claims with court notary – numerous do -- court process begins, most seem done/agreed/decided by Mar . 1580, but new claims arise as late as 1583</td>
<td>2.5— (but new claim in 1583)</td>
<td>Tadic (48) pp.327 ff.</td>
<td>3 days</td>
</tr>
<tr>
<td>1575</td>
<td>Ivanivic&amp;Dabovic Ragusa merchants in Serbia bankrupt, courts seized Ragusa assets against claims of 5,850 ducats. In judgment they were to send 860 ducats value of ox-skins immediately, pay rest in yearly annuity at 6% interest (no further time details given</td>
<td>About 1 yr.?</td>
<td>Palic (08) p.79</td>
<td>Seques ter Within dys. Weeks ??</td>
</tr>
<tr>
<td>1571</td>
<td>A partnership in Smederovo and Belgrade, but registered in Dubrovnik 1565 , announced bankruptcy: but creditors proposed continuation with restructuring (“sanacija”), and accepted annual payment of 200 talers</td>
<td>??? n.a.</td>
<td>Palic (08) p.79</td>
<td></td>
</tr>
</tbody>
</table>

It is also notable that the apparent time required to initiate cases in the courts, time given creditors to file claims, was very short—a matter of days or weeks. This is consistent with the qualitative judgments about court efficiency in the literature (including under the general ROL evidence we discuss later.). Palic(06/07) in particular
emphasizes the thoroughness and speediness of the process, the comprehensiveness of the underlying law and practices which contain many terms familiar even to the present day: sequester, liquidation, restructuring (sanacija in Croatian), rescheduling of term, etc. He claims (p.23) that ‘at that time, Dubrovnik was admired by Europe for its court procedures methods, being the exception from the middle ages darkness, showing justice and honorableness.” Speed and efficiency of courts in all cases, civil and commercial, is a point also made by others as Lonza (next sub-section)

Palic (08) further attests to another aspect of bankruptcy which demonstrates a favourable business climate; (p.83) unlike the “debtor’s prison” practices elsewhere - “the ultimate aim of bankruptcy…was not just settling [with] the lenders, but it was rightfully considered … helping the debtor overcome the state of inability of paying their debts… creates an atmosphere for further co-operation and doing business together.” This tendency to encourage out-of-court settlement is also seen in the general activities of courts beyond cases of bankruptcy—Table 7 and the extensive studies of Lonza summarized below provide considerable evidence on this.

Perhaps the first and most common modern measure of the EDB is days and costs needed to start a business; we have so far not been able to find data approximating this concept evidence—though this may be available in the rich Dubrovnik Archives. However, it would appear that starting a business or venture was frequently done with a relatively simple registration with an official Notary entry, thus apparently uncomplicated and almost immediate as is the case in many advanced countries today. In Table 3, we see indirect evidence of the extensive use of notarization; it shows the percentage distribution of 1,492 Notary entries in the years 1299-1301. If we consider Testaments, Dowries, and Personal Service and Employment notarisations as personal at least 33% of notarizations are business related—starting or operating a venture, dealing with debts, sequesters, guarantees. In fact this must be a lower bound, since in Testaments there were surely business-related elements, as well as in the rubric Services (in household) and Employment, and even Dowries – which were often designated for partial commercial use.

Palic (2006 &2008) describes briefly numerous cases of bankruptcy of Dubrovnik merchants in Balkan states/cities, but details are not always complete: in some cases amounts are given of debts, repayments, in others partially. In most cases a year is given for the initial bankruptcy insolvency, but not for time for making claims, or dates for final resolution. Hence we do not include them in Table 2, but it is abundantly clear in these articles that most cases once started went through a thorough process apparently speedy in the early stages, even if the two parties kept returning to courts to

106 The data are compiled from an extremely informative listing by Lucic(1993) of all such entries by one notary (there were by then a handful— which not only transcribes each form the Archival Notary books, but defines the category, provides an overview of the process, and an extensive index of individuals named, which allows some further analysis in later tables.
obtain satisfaction, sometimes after a long pause, and therefore any final resolution may have taken years.

### TABLE 3. RAGUSA 1299-1301 NOTARY ENTRIES BY CATEGORY

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th># OF ENTRIES</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TESTAMENTS</td>
<td>149</td>
<td>10.4</td>
</tr>
<tr>
<td>DOWRIES</td>
<td>68</td>
<td>4.7</td>
</tr>
<tr>
<td>SERVICE/EMPL(zaduznica)</td>
<td>741</td>
<td>51.9</td>
</tr>
<tr>
<td>APPRENTICESHIP</td>
<td>39</td>
<td>2.7</td>
</tr>
<tr>
<td>AUTHORIZATION(punomoc)</td>
<td>29</td>
<td>2.0</td>
</tr>
<tr>
<td>RECEIPT/VOUCHER/AUTHORIZATION/POWR OF ATTORNEY</td>
<td>13</td>
<td>0.9</td>
</tr>
<tr>
<td>PROPERTY TRANSACTIONS</td>
<td>171</td>
<td>12.0</td>
</tr>
<tr>
<td>GOODS TRANSACTIONS</td>
<td>119</td>
<td>8.3</td>
</tr>
<tr>
<td>SHIP/CARGO TRANSACTIONS</td>
<td>19</td>
<td>1.3</td>
</tr>
<tr>
<td>BUSINESS/PARTNER AGREEMENT</td>
<td>17</td>
<td>1.2</td>
</tr>
<tr>
<td>DEBT</td>
<td>1</td>
<td>0.07</td>
</tr>
<tr>
<td>COLLATERAL</td>
<td>40</td>
<td>2.8</td>
</tr>
<tr>
<td>APOHA (???)</td>
<td>15</td>
<td>1.0</td>
</tr>
<tr>
<td>GUARANTEE</td>
<td>3</td>
<td>0.2</td>
</tr>
<tr>
<td>FRAGMENT (this may be incomplete information)</td>
<td>5</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
<td><strong>1429</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Source: Authors’ computations based on Lucic (1993)

The qualitative evidence of ease of doing business merits some elaboration and we show below it almost universally confirms the conclusions implied by the data. That well-functioning notary and registration procedures and records for business contracts were established at least as early as the 13th century are referenced by many writers, and according to Stipetic (00-p. 18), existed from as early as 1200, with formalization in the 1272 Statut, and further details established in 1277 for economic rules in the Customs Book. That Ragusa was among the earliest states to formalize commercial registration and contract procedures is a common claim of its many historians. All of the above imply such an early development, and their periodicity, at least as early as the
beginning of the 13\textsuperscript{th} c., does suggest it was among the first to implement “pragmatic literacy”\textsuperscript{107}, only marginally later than Italian cities and the first Dalmatian city, Zadar. Dates for Western Europe given by Kuran (2011, p.242) allows a broader comparison: “In Venice written contracts became mandatory on matters of importance \textit{[in court cases-au.]} in 1394, in France in 1566, in Scotland in 1579, and in Belgium in 1611. In England they became mandatory on all contracts with the Statute of Frauds of 1673.” Kuran (p.243) also mentions that the first agreement of Ottomans with western trading states imposing documentation requirements for court disputes involving foreign merchants, was that with Dubrovnik in 1486, preceding the Mamluk-Florentine treaty of 1497 which did the same, and one of the most important “capitulations”, that arised with France in 1536. It needs verification to ascertain whence came the initiative for the 1486 Dubrovnik agreement, but given the history of passivity in Ottoman actions and initiatives of Dubrovnik trading efforts, the best guess would be from Dubrovnik.

The depth of formal and informal institutional support for commercial activity is also evidenced by the renowned richness of the Dubrovnik Archives—the records are so large that it required 61 pages for Carter (72 Appendix 3, based on the work of Gelcic 1910). To merely list the names of documents, under 40 categories such as Council Proceedings, Miscellaneous Notary Documents, Manufactures, Customs, Administration Receipts, Expenditures, Acquisitions, and so on. Earlier the economic contents were reviewed by Tadic (1961), with a clear message of the vast possibilities for doing research on economic questions about Ragusa using primary source information and data.\textsuperscript{108}

Many other early institutional elements that today would be labeled “a favorable business and rule-of-law climate”, can be pointed out. Thus Luetic (61-p.107), and Carter (72 –p.157) note the beginnings of the first maritime insurance policies were organized as early as the 14\textsuperscript{th} c, while Doria (87) discusses how thoroughly this had become elaborated by the 16\textsuperscript{th}.century. A revealing description of bankruptcy procedures in 14\textsuperscript{th}-15\textsuperscript{th} c. in several articles by Palic (2006.a, 2006.b, 2008 ) concludes in (2006.a –p. 23) : “court decisions ... were kept in very thorough transcripts with notified damage compensations, punishment types and dispute settlements ..” he also claims that “at that time, Dubrovnik was admired by Europe for its court procedure methods, being the exception from the middle ages darkness , showing justice and honorableness.”\textsuperscript{109}

The early and pioneering development of modern accounting by Kotruljevic (1440) is described by . Stipetic (00-p32-as well as Krekic and several others . Indeed there is

\textsuperscript{107} A term suggested by Nella Lonza in a private communication, in which she also indicates the beginnings of document formalization in Italian cities, in the 11\textsuperscript{th} C., with Zadar probably the first in Dalmatia quickly followed by Ragusa

\textsuperscript{108} Nenad Vekaric, Directot of the History Institute in Dubrovnik, confirms to us in private communications the existence of huge amounts of economic information, but with a strong caution about the large investment of time needed to collect systematic data-sets.

\textsuperscript{109} While this claim is consistent with other writings, unfortunately Palic does not provide references to European writers of the time to substantiate this claim.
now solid scholarly evidence that this was the first formalized ‘handbook’ on how all good merchants/traders should maintain balances in accounting books, use double-entry bookkeeping, use banking instruments for trade such as bills of exchange, letters of credit. This alleged ‘first’ has put on the table of the modern accounting literature a debate: was the first as was always considered the 1496 manual of Venetian Lucca Pacioli, or should this honor be given to Kotruljevic’s 1440 chapter on double-entry? The issue is beyond reach of our paper, and we leave it at the following; in a personal email communication from the Dutch scholars Stipetic mentions, Postma and van Helm suggest that while indeed Kotruljevic briefly describes double-entry bookkeeping in 1440 and later, the first truly complete manual on how to do it, and the one which had the greatest future impact was that of Pacioli in 1496. 

But for our purposes, the now-accepted fact that Kotruljevic did have such views and wrote them in a manuscript passed around manually, is clear evidence of the right attitudes to promote commercial activity and prudent state finances. Indeed, Kotruljevic was very early in the history of economic thought expounding views that were very radical for the times, such as interest being the price of capital; credit being critical to fuel commerce and only usurious if excessive (5-6% was his proposed limit); His 1458 treatise “Il Libro dell’Arte di Mercantura” argued all these were requirements to achieve prosperous trading, and not least important he noted the need for the state to ensure an open mercantile and trading environment conducive to making money, creating wealth, minimal interference of state in commerce, prudent state finances. Kotruljevic presaged by six centuries today’s received wisdom about ROL and a good business climate. He would well deserve honorary mention by the World Bank’s Governance and Doing Business Report.

A second case showing the advanced state of scholarship, and especially of interest to modern economists is another little-known first by a citizen of Dubrovnik. A recent review of least absolute value regressions (LAV) by Dielman (05), writes that Rudiger Boskovich in 1757 and 1760 works “explicitly discussed minimizing the sum of the absolute errors as a criterion for fitting a line to observation data. This is the first recognized use of the LAV criteria...ans is prior to Legendre’s announcement of the principle of LS in 1805.”

Numerous writers state that the first quarantine station in the Mediterranean was established in Ragusa in 1377 (the Lazaret, which were eventually moved to the mainland still stand today as a commercial-entertainment centre). Three recent studies by public health specialists explore this world-first: Frati (00), Lang and Borovecki (01), and Cliff, Smallman-Raynor and Stevens (10) While quarantine stations might be considered a social fairness measure like hospices and government-employed physicians, arguably the 1377 quarantine station was, as is well documented in deliberations of the Great Council (see Frati) in the first instance motivated by the need

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110 Stipetic (00) refers to non-Croatian scholars – presumably less-biased- who have found clear evidence that Kotruljevic was the first to develop double-entry book-keeping, in 1440, well before the 1496 work of Lucca Pacioli which had earlier been thought to be the first. 
111 We thank Kresimir Zigic for pointing this out. Dielman also suggests that Gauss was aware of the work of Boscovich.
to continue doing business. after the first waves of the Black Death in the middle of the 14th century.

But the state’s direct role in the economy was not large—including surprisingly less expenditure on military and naval forces than one might expect in this period, as we elaborate in Section IV. (vi). There was however the usual mediaeval Europe regulation of professions and crafts with guilds, though it is not clear how restrictive they were. Also common were brotherhoods or fraternities (“bratovstva” in Croatian) which acted as early forms of commercial ventures, shareholding companies and investment pools. Further, the state did provide direct subsidization and some control in three areas: shipbuilding, maintenance of grain reserves for times of crisis, and promotion of textile manufacturing in the mid-15th c. The first two were in place throughout Ragusan history and are considered by most historians to have been fairly successful interventions. The third is an excellent early example of protectionism to encourage an infant-industry, today known as Industrial Policy- IP. This is not considered very successful. Most analysts recognize its failure and note that, sensibly, the government eventually did so too, and ended this policy after a century by about 1550. Stuard (1972)-p.163) explains the initial government reasoning as a sensible reaction to the external shock in mid 15th century, when scarcity in supply of textiles from Florence threatened an important trade-line with the Balkans. But he too agrees this was not in the end very successful, giving a very detailed account of the repeated and futile efforts to support the industry. (pp.294-308): “Throughout the period 1450-1550 government legislation on cloth manufacture was continually trying to bolster production…[using various measures like] customs duty…incentives for merchants to sell home-made cloth… regulating quality standards…financial support for a central workshop... [But] competition was being felt with increasing effect in 16th c.….Dubrovnik’s government, on reading this situation, began to invest in alternative industries such as gold and silver working which by the second half of the century had more importance for export trade”.

The consensus that shipbuilding was a relatively successful intervention cannot be demonstrated quantitatively without more detailed primary-source data on the actual subsidy costs, but it is worth considering the main qualitative arguments in the literature and observations by contemporaneous foreign observers. Basic (06-p.153.) cites several contemporaneous Italian observers who refer to the excellent craftsmanship and superior quality of Ragusan-built ships: Bartolomeo Crescenti (Rome 1602) states the best craftsmen and shipbuilders of the Mediterranean are those of Ragusa; Pantera (Rome, 1614) considers the best shipbuilders those of Ragusa, Portugal and England; Sagri (Venice 1574) contends Ragusan ships are the strongest in the world, and of the best wooden materials. Harris (98) also argues that support for

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112 Vardic(07) describes in detail the history and functioning of one of the biggest, St. Antunin. As in much of mediaeval and Ragusan life, a nominally religious connotation was common for commercial activities. A very detailed discussion of bratovstva is given by Vojnovic (1899-19000).
shipbuilding in the form of provision of a location (the Arsenal, first at the old central harbour, then in Gruz as of the 16th century) was indeed successful, as evidenced by the strong international reputation for shipbuilding mastery noted above. Harris’s reasoning goes beyond that found in other works, concluding—in our view very sensibly—shipbuilding support was successful because it made economic sense, while nurturing a textile industry to compete with the long-standing masters in Florence, Bruges, Ghent—did not.

A somewhat different view of the non-interventionist government is given by Janekovic-Roemer (03), who shows that increasingly during the Golden Years of the 15th and 16th centuries, rules for personal behaviour, and public decorum became more prevalent and restrictive, concerning attire, household maintenance, personal and family behaviour, religious observance etc. She does not however claim that intervention in commercial activities increased, from which one might conclude that in our Tiger anachronism, Ragusa was more like Singapore than Hong Kong. In a similar spirit, the argument of Perlender (05) that the “paternalistic” conservatism of nobility explains the inability to change and react to new competition in the 17th-16th centuries, is in effect also an argument that government interventionism was greater than most believe, and had negative effects.

Finally, that the size of civil service was small is suggested by Sisak (10), estimating it at 160 people in mid 15th century when the population was probably 50,000 or more. However this does not include Ragusans on consular service and any military personnel. Available data in Caretr (72) and Krekić (80), indicates approximately that the number of consulates was at least 40 in the Golden years, and rose to 70 or more in the next period. With several people in each consulate amend perhaps 200 or so soldiers (as we show below) the numbers of civil servants may be 2-3 times Sisak’s estimate—but that would still be small, not exceeding 1% of the population.

In sum considerable evidence in the form of indirect quantitative measures of business related formalities, bankruptcy treatment in courts, as well as extensive qualitative indications from historians, generally point in the direction of HH8, that the climate for commerce, or doing business in the modern jargon, was quite favorable.

IV (iv) Evidence on effective Rule-of-Law

Numerous historians emphasize the rules-based governance of Ragusa and its relevance for the prosperous economic development; the spirit of this is succinctly captured in the frontispiece citation from De Diversis. Stipetic ((00) provides a good overall summary of the favorable legal basis and practice of Ragusa and adds a vivid

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113 That there were unsurprisingly more in the important trading partners is shown explicitly by Carter (72-p.145, Fig.22). In the mining regions of Bosnia and Serbia the number of permanent resident merchants in the 15th century was as little as one or two (Vrh Bosna = Sarajevo; Borac), and as many as 15-30 in the main trading centres (Foajica, Visoko).
history of Ragusan writings on economic theory. But with the exception of several works by Lonza which we rely upon considerably here, the literature again is largely non-quantitatively based. We will begin by presenting some selective quantitative evidence, sometimes indirect, which is consistent with HH 9: ROL was established early and was generally implemented effectively and fairly; then we will add some qualitative evidence for the literature to buttress the case.

### TABLE 4: RAGUSA 1299-1301 NOTARY ENTRIES RELATIVE TO POPULATION

<table>
<thead>
<tr>
<th></th>
<th>#of Individuals named</th>
<th>Population Range</th>
<th>% of Population using Notary</th>
</tr>
</thead>
<tbody>
<tr>
<td>City</td>
<td>2,000</td>
<td>(4,000)</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>2,000</td>
<td>(7,000)</td>
<td>29</td>
</tr>
<tr>
<td>Republic</td>
<td>3,066</td>
<td>(10,000)</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>3,066</td>
<td>(15,000)</td>
<td>20</td>
</tr>
</tbody>
</table>

Source: Author’s calculations based on Lucic (1993) and population summary tables in Havrylyshyn and Srzentic (2012)

We start with some data on the use of a Notary in very early years, 1299-1301, based on the work of Lucic (1993) covering 1,492 Latin entries involving 3,066 individuals; Lucic adds some commentary and analysis. We have already used this work for above discussion and Table 3 information on types of activity covered by notarization. In Table 4 we calculate approximately the percent of population involved in those entries, as an indicator suggesting that Ragusans utilized formal notarization procedures quite extensively. As population estimates for this period are not very solid, we choose numbers that bias against our claim; nevertheless it must be noted these numbers are unverifiable estimates. Taking them at face value seems to say that anywhere between 20% and 50% of the population was involved in some way – surely a very substantial and wide coverage of population for the year 1300- though we have not yet been able to find comparator data for other states- and consistent with HH8, ROL was relevant and widespread as early as the late 13th c.

There is reason to believe that many of the individual named were “professional” witnesses (who did get a fee for this), hence we re-test this claim of widespread use of Notary from another angle in Table 5. The number of individuals who appear more than 10 times accounts for only 10% of the total which is to say that 90% were users limited number of times. It would seem reasonable to posit that any merchants skilled craftsmen and middle income people might turn to a notary 2 or more times in a 3-year period, and those at bottom of social-economic ladder at most one time, so it is very

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114 No reliable estimates exist much before 15th c but many historians seem to accept range 14th c. of three to four thousand in city, a total of 10,000 -12,000 for Republic (see Appendix Table 1). To avoid overestimating percent column we use range of 4-7 thousand and 10-15 thousand respectively.

115 Author’s rough guess, based on details of entries suggests large proportion from city – we use 2/3. Even when entry deals with activity outside city, it often involved city people, not surprising as wealthiest lived there.

116 The Republic did not yet include much of the territory added later (as in Fig.2) hence we take a maximum population 15,000. The city within the walls at no time had much more than 5,000 inhabitants, but we take as an upperbound 7,000; even the lower bound of 4,000 may be an overestimate as in 1300 and later many new houses were being added on empty lands—indeed at least 100 of the entries were for new construction, additions.
suggestive of widespread reliance that 55% of the individuals were named only once. The middle group, 35% were likely those with somewhat greater wealth or economic activity status.

**TABLE 5. FREQUENCY OF INDIVIDUAL’S INVOLVEMENT IN NOTARY ENTRIES RAGUSA 1299-1301**

<table>
<thead>
<tr>
<th># OF TIMES NAMED</th>
<th># OF INDIVIDUALS</th>
<th>PERCENTAGE DISTRIBUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Time</td>
<td>600</td>
<td>55</td>
</tr>
<tr>
<td>2-10 Times</td>
<td>385</td>
<td>35</td>
</tr>
<tr>
<td>11-25 Times</td>
<td>80</td>
<td>7</td>
</tr>
<tr>
<td>25+ Times</td>
<td>35</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Author’s compilation based on Lucic (1993). The Lucic editing of these archival sources has an appendix of all individuals named, with reference to the entry number, which greatly eased the above computations.

We turn next to some data that is understandably indirect, nevertheless supportive of the hypothesis that ROL was well implemented, relatively efficient and effective, and covered a wide swath of the population. Table 6 for the 15th c. shows the distribution of a large sample of 589 criminal court cases in an extensive archival study by Lonza, by type and outcome. The first point to observe is that while these were not civil cases, nearly one third (31.4%) did involve property violations of various sorts, hence the study does throw some light on the issue of EDB as well. Further it confirms the claim made by Palic and others as discussed earlier, that Ragusean courts strongly encouraged out-of-court settlements. The percent of cases going to final judgment was about 20% or less for bodily harm or verbal abuse cases, and many were ended in the midst of hearing the case, presumably because the two sides came to an agreement. This tendency was far greater for property cases with less than one percent going to final judgment (0.54% in Lonza’s raw numbers) – and even with the adjustment noted in Table 6 notes this was at most 1.8%.

The inclination to settle out-of-court and its encouragement by the courts only increased over time, as Table 7 shows. In a sample of 2,142 cases spread over nearly two centuries studied by Lonza, one sees clearly that the percentage going to final judgment in first half of 14th c. was about 40%, and declined steadily so that in the later years of the 15th c it was about 14-17%. Lonza (2002, p.104) indeed concludes that courts on the one hand encouraged this, and plaintiffs on the other hand “used the courts as a form of pressure, bringing charges, or accusation even though they were altogether disposed to settle out of court. That the legal institutions of Ragusa facilitated this system more than perhaps others in the region is suggested by Palic (2006a and b) and 2008, by providing such services very low cost if not free – except for possible costs if found guilty – while in Venice and elsewhere there were potentially discouraging up-front costs. He also suggests there was very little political influence which was

117 the latter account for a perhaps surprising 29% of the sample, though this is also seen in Northern Italy and may reflect the “sowing wild oats” behavior of young nobles typical of the time.
limited to a few very big or significant cases and hence a level playing field; but this last conclusion is more qualitative and perhaps conjectural.

**TABLE 6. COURT ACTIONS BY TYPE AND OUTCOME (Average percent for 1423, 1466 and 1487)**

<table>
<thead>
<tr>
<th></th>
<th>BODILY HARM</th>
<th>VERBAL ABUSE</th>
<th>PROPERTY VIOLATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISTRIBUTION</td>
<td>49.4</td>
<td>19.2</td>
<td>31.4</td>
</tr>
<tr>
<td>OF 589 CASES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DID NOT GO</td>
<td>7.22</td>
<td>3.54</td>
<td>70.27</td>
</tr>
<tr>
<td>BEYOND</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHARGE, PLAINT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>END BEFORE</td>
<td>55.67</td>
<td>54.87</td>
<td>22.16</td>
</tr>
<tr>
<td>HEARING COMPLETED</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JUDGMENT-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% OF TOTAL</td>
<td>21.31</td>
<td>20.35</td>
<td>0.54</td>
</tr>
<tr>
<td>[% adjusted-see note]</td>
<td>[23.0]</td>
<td>[21.1]</td>
<td>[1.8]</td>
</tr>
</tbody>
</table>

**Source:** extracted and calculated from Lonza (2002) Tab 4, p.85

Note: Row 4 calculation relative to total may not be conceptually correct measure of settlements; Lonza makes clear that most of those in row 2 were terminated because evidence or witnesses not available; we adjusted this by taking a percent of the remainder from those terminated, shown in [..]

The last set of quantitative information on the legal process, in Table 8, provides support for the view that the efficiency and speed of court procedures was quite good. The data is again based on an archival study by Lonza (1997), unfortunately mostly for the 18th century which may or may not give a fair representation of earlier periods, but a subsample does cover the years 1276 and 1418. The first conclusion is that in all years well over half the cases were completed within a year. (N.B. In the last four rows the numbers are cumulative hence the values comparable to the first four rows are: 93, 92, 71, 78). The very early values show that cases taking more than one year were, at 47% and 39%, much higher than in the 18th century, as little as 7-8% in some years between 20 and 30% in others. That the speed was affected by case-load is also made clear by Lonza’s work. In two years of average case-load (1738, 1776) over 90% are done within one year, indeed more than half within 6 months; in years of a heavy case-load (1750, 1783), percent completed in one year is less, but still about 70-80%.
TABLE 7. TREND OF TERMINATION /FINAL JUDGMENT PROPORTIONS OF CASES, 1312-1499

<table>
<thead>
<tr>
<th>PERIOD</th>
<th>COMPLAINT ONLY</th>
<th>FINAL JUDGMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1312-1313</td>
<td>7.35</td>
<td>41.18</td>
</tr>
<tr>
<td>1348-1350</td>
<td>4.26</td>
<td>42.55</td>
</tr>
<tr>
<td>1372-1374</td>
<td>11.32</td>
<td>26.95</td>
</tr>
<tr>
<td>1401-1402</td>
<td>19.05</td>
<td>16.40</td>
</tr>
<tr>
<td>1423</td>
<td>25.73</td>
<td>16.40</td>
</tr>
<tr>
<td>1447</td>
<td>36.33</td>
<td>22.10</td>
</tr>
<tr>
<td>1466</td>
<td>48.59</td>
<td>2.1</td>
</tr>
<tr>
<td>1487</td>
<td>20.65</td>
<td>17.4</td>
</tr>
<tr>
<td>1499</td>
<td>17.02</td>
<td>13.8</td>
</tr>
</tbody>
</table>

Source: Lonza (2002), Tab.3, p.82 (total of 2,142 cases studied)

TABLE 8. SOME QUANTITATIVE EVIDENCE OF EFFICIENCY AND SPEED OF RAGUSA COURTS: 13th-18th c. - Percent of cases completed, by months

<table>
<thead>
<tr>
<th>YEAR</th>
<th>1m</th>
<th>1-3m</th>
<th>3-6m</th>
<th>6-12m</th>
<th>12m+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1276</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>53</td>
<td>[47?]</td>
</tr>
<tr>
<td>1418</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>61</td>
<td>[39?]</td>
</tr>
<tr>
<td>1736-38</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>75</td>
<td>[25?]</td>
</tr>
<tr>
<td>1780-83</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>64/78</td>
<td>[22-36/]</td>
</tr>
<tr>
<td>1738</td>
<td>23</td>
<td>23</td>
<td>31</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>1776</td>
<td>15</td>
<td>14</td>
<td>42</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>1750</td>
<td>-</td>
<td>-</td>
<td>7</td>
<td>64</td>
<td>29</td>
</tr>
<tr>
<td>1783</td>
<td>-</td>
<td>-</td>
<td>34</td>
<td>44</td>
<td>22</td>
</tr>
</tbody>
</table>

Source: Lonza (1997..PP.265-272)

Thus, the limited quantitative evidence, while not precisely the same type of measurements as in modern day EDB assessments of institutional quality, would appear to be consistent with HH9 that Rule-of-law was widespread, generally efficient and well implemented. The only quantitative evidence for a level-playing field is very limited and indirect: the use of Notary registration for all sorts of personal and commercial contract appears to have covered a large part of the population. In addition to the quantitative evidence we have been able to compile here, it is worth adding there exists extensive qualitative indications of this in the literature, many of which we have already noted earlier.
It is important to repeat there were already numerous laws and regulations in the 12th c., and the 1272 Statut was first of all a codification of these. Furthermore the codex of commercial, laws continued to expand and be modernized throughout the following centuries. Virtually all historians agree that while the myth of noble blood and democracy are just that, and the primacy of nobility in governing the state was quite rigid, the application to all of the ROL was not simply paper laws, but it was quite effective in its implementation. A fairly strong “acid-test” is that in a historical period of great rivalries among states and nations, there exist numerous instances of Ragusa authorities enforcing claims by foreigners on citizens of Ragusa. Thus, the Pabora family of Ragusa was bankrupted in 1315, and over the coming years Ragusan courts ruled in favour of claims by many creditors from Venice, and the well-known Peruzzi bankers of Florence, conveying Pabora family assets to these foreign claimants. (Krekic97, XI,p.13 ff.). The Ragusan noble and merchant Bunic-whom we met above as Bona-a “tax-farmer” in the Balkans on behalf of the Porte,-became in 1471 a fugitive from the Sultan after an alleged embezzlement of 55,000 ducats to his own account. The Ragusan courts seized his local assets to cover the claim, and years of litigation followed, with Bunic, the Porte, and the Ragusan courts coming to an eventual settlement. (Bojovic, 98 p.114.-117). Bojovic goes on to cite many other court claims, noting further that “cases of a similar sort were repeated numerous times.”

IV (v) A “sufficiently fair” social policy

We use the word “fair” and not “equitable” (in the neo-classical economist's sense of equality of opportunity,) as there was no question about the monopoly role of the nobility in government, or that the fact that a large portion population lived at very low levels of income, particularly in the countryside. However, the consensus seems to be that the nobility paid sufficient attention to the well-being of those who must necessarily be the work force on ships, shipyards and trade-related activities, to ensure a degree of social stability unusual for the times. This may not have been altruism but a self-interested action, but still quite enlightened compared to others. Furthermore, economic mobility was certainly possible for the most enterprising, many of the rich coming from amongst the “puk” (commoners), as evidenced above. Sisak(10-p.182) typifies the literature in contending: “The loyalty of the Dubrovnik population to the social order and hierarchical structure of government was atypical compared to other cities in the Adriatic”. His sketch of this social order may be too positive, but is worth quoting at length:

118 A tourist to Dubrovnik today, if taking a day-trip and picnic on one of the local “Carracks”, will be shown by the guide, a copy of the section from the Statut on the rights of sailors and obligations of the captain, prominently displayed inside.

119 Bankruptcy of the Peruzzis and the Bardis in 14th century was one of the episodes of shock that could be investigated under the resilience hypothesis.

120 This was a very large fortune: in comparison, the annual salary of Diversis as teacher in the local gymnasium in 1440 was 180 ducats plus housing and living costs; Luetic (69) notes well paid sailors in 16th. c received 2-4 ducats per day, working half a year typically, this gave them 200-300 ducats per year, while shipmasters would have about about three times this amount, i.e. 600-900 per year.
"political monopoly of the nobility was accepted as the normal state of affairs...the welfare which prevailed in the city...and the possibilities to make profit and, to some extent to climb up the social scale...were also important...The nobility [had] a privileged position, but they in turn had to ensure the well-being of the rest of the population...The government saw to it that there was no shortage of food or anything else, so it procured grains and kept up the commodity reserves...Moreover the state was mindful of social welfare (assisting the poor who were directly sustained by the government), it secured the material life-conditions (waterworks, sewage, public fountains), it paid the doctors and apothecaries who treated everyone [without charge] from the Rector to the city's poor...it appointed teachers...[etc.]."

Other writers agree broadly that social provisions were relatively unique, but are generally more realistic than the above citation. Carter (72-p.116) concurs that "on the whole, the 'cittadini' and peasants were ruled with wisdom and without oppression", but balances this by noting (p.116) "[appointed governors of the territories] governed despotically...Dubrovnik’s ideas of liberty were not only restricted to a limited class, but did not extend a yard beyond the walls." Diversis (1440 as cited in Stipetic (00) p.25) was blunter: "many noblemen and merchants have great wealth, but the majority live in sheer poverty...[the best of these] are sailors and peasants. This comment on peasants may be at odds with Carter's judgment of despotic governance in the territories; since grains were always in critical shortage, and as Carter (72) notes the territory could at best provide one-third of needs, it is questionable that peasants who could not produce much surplus would be overly harshly treated, and the view of Diversis on the position of peasants makes more economic sense. The resolution of this inconsistency may lie in the fact that a regional governor or local knez was usually a very junior appointment for young nobles to as they began to fulfill their government obligations—and many may still have been in the usual stage of incomplete maturing attended by brash or even cruel behavior towards commoners. But as Krekic (1997..Ch.V) notes, oversight from the city was close and punishment for "immature" excesses of young nobles, including recall to the city, was quite common.

As to the true extent of poverty and how much social support was provided, Krekic, whose extensive works can by no means be characterized as romanticizing the Ragusan idyll, in his (1997, Ch. V) study of urban life in Ragusa goes into great

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121 Sisak is also more positive than others on concordance of elites (p196): “never in the long existence of the Republic, except on rare occasions, did dissent among the nobility come out in public”. True, peasant revolts did not seem to occur, and internecine nobility disputes were much less than elsewhere, but dissent did occur many times and had to be defeated, sometime brutally. Vekaric (05) recounts the largest such revolt of the Lastovo Island nobles.

122 He provides many demythifying studies, including for example on the notion that slavery was completely abolished already in 1416 in Krekic 91997, Ch.IV he makes clear from the written records that this was a mere beginning, limiting the trade in slaves form immediate hinterland to avoid conflicts with Bosnian bans.
detail to show that while indeed there was considerable poverty, especially at times of famine or other shocks, there was continual attention paid by state agencies from the Senate on down to consider measures to alleviate poverty. The main types measures are listed below, but one micro detail reflects nicely the spirit of this attitude. In 1406 the decision to minimize fire-risk by prohibiting wooden buildings, including destroying existing ones, the relevant legal document stated: “simultaneous destruction of all (wooden houses) would harm very much the [poor persons who own such houses], hence the program was to be implemented by having groups of twenty-five demolished each year. In addition “not to burden too much the poor men in demolishing the said houses” they would be reimbursed for one-third the value, allowed to keep the materials, and could build on the same spot anew stone or dry-wall house.\(^{123}\)

Leaving aside some uncertainty on “just how fair was fair” in Ragusa, we turn to illustrate some of the specific measures aimed at social welfare, starting with basic infrastructure of benefit to all the population. We have already noted above that for some analysts, given the historical context, the building of churches and monasteries was a form of social welfare. Carter’s Table of principal buildings (p.484-5) used for our Table 1 also notes a synagogue built in 15th.c, though whether it was state-financed like the Catholic churches is not indicated. Not shown there are both a Mosque and an Orthodox Church which were approved in later years by the state, but it is unclear how they were financed.

Other infrastructure for the populace included street paving, as early as the 14\(^{th}\) century, sanitation infrastructure, limitations on wooden buildings (to minimize fires) provision of water with wells, aqueducts, public fountains —including the famous Onofrio Fountain built in 1437 and still used today.\(^{124}\) Hospitals and hospices, homes for orphans and indigents should be included as infrastructural provision for the populace, and a part of the health care system. The provision of health care and facilities is considered by many a pioneering high point of Ragusan social fairness achievements, and many of the historical volumes we have cited (Bojovic, Harris, Krekic, Stuard) emphasize this. A recent systematic review, by modern-day specialists on health policies from the National School of Health in Zagreb, Lang and Borovecki (01), provides many details using archival data and concludes: “it is obvious that Dubrovnik had a high level of health and social care organization (home for foundlings, residential home, \{probably a ‘hospice’;au\} various health regulations. Similarly, Frati (2000) details the introduction of quarantine, as well as other measures like seeking the best physicians in Italy, sending talented youth to learn medicine there, and so on. Frati realistically notes that the motivation for the famous first quarantine station of 1377 originated mainly from the need to protect the safety and quality of the commercial

\(^{123}\)Krekic 91997, Ch. V, p.7. This study gives numerous other examples of actions to alleviate poverty.

\(^{124}\)Stuard (92) also confirms the many efforts at providing water supply by boat, and when this became insufficient the building of an aqueduct from the Ombla river (about 10km distant), with the Onofrio fountain at the city-end. She notes that with these projects, a new set of archival books began to be kept, Libri reformationes with data on many community projects. Unlike some other authors who attribute much of Ragusa’s effective governance to Venetian customs, or make no attribution, Stuard in this chapter mentions several times the legacy from Byzantium for health care, public infrastructure. Jenekovic-Rohmer (06) also gives Byzantine legacy a lot of credit.
network rather than for medical aethopathogenic purposes”, but she emphasizes that this definitely also provided a great social benefit to the entire population.

Provision of education for all classes in the city—but not in rural areas—provides additional evidence of “the patrician’s enlightened attitude toward talent” (Bjelovucic(70.p.62.). As early as 1323 a master Nicholas of Verona was appointed as a teacher on state salary, followed by along series of Italian teachers in greater numbers, so that by the mid-15th c. the famous De Diversis was in fact Director of a “gymnasium. Many writers cite him and other documents to the effect that these teachers should teach well, solicitorily and assiduously all the pupils citizens and inhabitants of Dubrovnik. {our emphasis} … without accepting any payment from those pupils.”

This policy continued as Bjelovucic notes in later, decline centuries, with the Jesuits being given state funds “to teach all youth who wish to attend public schools” and “sending bright boys (sic) overseas to study at government expense.”

The only hard data on education is the 1800 budget analyzed in Sec. IV. ii; the raw data behind Figure 8 suggests education expenses were in 1800 a high 6.8 % of total, but some dispute exists on this value, due to the problem we noted of the Bjelovucic data not adding up correctly. If we were to leave all components unchanged and take percentages of the summed value, the education share would be less, at 5.3%. However, some sources indicate the value for this category is half that Bjelovucic shows, and the share could be as little as 3.3%. id this high or low? Unfortunately the Bonney (95) volume on state finances does not provide comparative values, though this very fact is suggestive of public education expenditures being so low that they are not shown in any of the tables or charts there.

The last category we will mention concerns the strategic reserves of grain and other staples, storing them in so-called “rupe” or granaries built often as part of the city walls. The largest set of these—which can still be visited today—was built between 1542-1590, but earlier, simpler ones started from the first centuries. Related to this were interventions in grain markets such as capping prices in times of shortage to minimize price-gouging, direct sales by the state, and limitations on how much land peasants could plant in vines which gave far more yield in the rocky, hilly terrains of the Republic than grains. Some of these were for the mediaeval period arguably justifiable, as transport time and costs precluded quick filling of gaps in basic food requirements.

To sum up, the evidence Section IV. v contains only one hard data point for a very late period in 1800, but considerable fragmentary estimates and innumerable qualitative evidence in the literature, does show a consistency with HH9: Ragusan state

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125 Krekic (1997, Ch. VIII, p.226. This article provides extensive detail on education, literacy, the first public library in 1465, book holdings, sales, and printings. In Ragusa.

126 Most historians make reference to this—we cite here only Bjelovucic, partly because she discusses, the late 16th c., suggesting that despite the decline of 200 years, Dubrovnik was still thriving and wealthy—an indication that while its aggregate GDP may have fallen considerably, per capita values may have held up or even increased—a hypothesis that merits further research.

127 We thank Rina Kralj-Brassard for these clarifications.

128 It is beyond the scope of the present paper to research further sources on public education expenditures in other mediaeval states, but this clearly is a potential topic for further research.
authorities undertook relatively enlightened social policies in support of the entire population, including many measures to alleviate poverty. This should not be overstated to imply an altruistic and equitable attitude, or always successful alleviation of poverty, nevertheless it seems to represent a high-point in this period of time.

IV (vi) Minimal Military Expenditures, Maximum Diplomacy

Berkovic (09) provides a comprehensive analysis of Ragusa/Dubrovnik foreign policy and this section is based to a large extent on his work, as well as that of Carter (72) which devotes several chapters to diplomatic developments over more than seven centuries with each of the main neighbours, trading partners, suzerains, friends and foes; in effect for each of the political phases lasted in Section II(i). Our sub-title avers to the commonly held view that Ragusa, unlike virtually all other nations and states of the period, did not achieve its commercial, power by use of force, substituting this with skilful and constant diplomacy. This hypothesis merits future quantitative research to confirm or reject the partial conclusion we reach on the basis of Table 3, for 1800, which may be quite unrepresentative of earlier centuries. However considerable qualitative evidence from the literature is strongly consistent with the hypothesis, even if the point may sometimes be exaggerated in degree. We start with a discussion of military/naval forces, then turn to a selective presentation of key diplomatic efforts, most of them successful, but a few less so. We do not include an analysis of the extensive network of commercial consulates, which should surely also be considered as part of diplomacy.

IV (vi) a Minimal Use of Naval and Military Forces?

The central thesis of Berkovic (09-p.220) that “foreign policy and diplomatic skills played a key role in the survival and development of the Dubrovnik Republic” represents a virtually universal consensus among historians, though his assertion that it was “a small country with no military force” may overstate the case. Consider a number of quantitative albeit fragmentary pieces of evioidence.

We have already noted the treaty obligations with Venice to provide in wars 1 galley per 30 Venetian ones, and given the latter’s use of 100 or more in some of its wars as Lane (72) describes, there certainly was a minimum naval force of 3-4 galleys at ready.129 In fact Luetic (61) while also emphasizing the very small size of Ragusa’s naval force—the title of his chapter on this is “The Most Modest War Fleet” (p77-ff) –

129 Similar but less specific demands on Ragusean contributions were made under the Hungarian overlordship period. Under the Ottomans, this was not the case, as both Ragusa diplomacy and Ottoman wisdom realized that the most Ragusa could do is refuse to provide, or provide only peremptorily, naval forces to Christendom’s many wars against the Turks in the 16th-18th century.
describes for the 17th century several types of war ships: large galleys (galiija—two levels of oarsmen), small ones (galica—about 30 oarsmen), and other types like frigates, the Neapolitan filuga, bargues and some smaller ones. Unfortunately he is quite imprecise with numbers—one or two of this, some of that type etc. Nevertheless one must infer a total of least 10 or more war ships—a very small fleet in any comparison but hardly a case of “no military force.” Of interest is the claim by Luetic (61-p.78) that such ships were unusually modestly decorated with figures, scrollwork, painting—save for the obligatory representation of Sv. Vlaho-St. Blaise. Verifiable or not, this is certainly another indication of the financial prudence of Ragusan authorities.

The only numbers on land forces come from Lonza (1997,p.96) noting that in the first half of the 18th c. there were about 100 local soldiers supplemented by 50 “barabantes” (foreign mercenaries??). One might expect that by this time the long-standing achievements of diplomacy would have minimized the need for actual military forces, nevertheless the number is quite low for a population of about 25,000 shown in Fig. 2. Furthermore by this time even the magnificent fortifications were outdated and surely far less effective against 18th c. cannon-power. These numbers did not change much over the century, reaching by its end about 200 and 20 respectively— the reduction of mercenaries Lonza attributes to “the need to resolve problems of state expenditures.”

We turn now to some qualitative indicators. On the one hand a number of these point to a modest force which at best provided a minimal deterrent defense, mitigated the threats of pirates, and allowed Ragusa to meet its obligations to contribute warships to its overlords. Luetic (61) emphasizes that the building of specialized warships was generally done by hiring foreign, (e.g. Neapolitan) masters, or even buying ships from Naples. That these ships in fact were not often used for war is suggested by reference to their employment as diplomatic couriers, transporting Ragusan diplomats on legations, or bringing foreign ones to Ragusa for negotiations. They were also put to use as escorts of commercial convoys protecting against pirate raids, and often on missions to destroy popular pirate havens in the Neretva region—although if short-term “agreements” were reached with such pirates to attack only, say, Venetian ships but not Ragusan ones, such missions would be suspended.

On the other hand, several writers emphasize that even the commercial fleet was outfitted lightly with cannon and deck arrangements for armed sailors/soldiers, all of which could be swiftly enhanced for war needs, thus a standing war fleet of 10-12 vessels could and was increased as required. Furthermore, expenditures on the massive fortifications must also be considered a military allocation. Finally, we found so far little discussion on the earlier periods from foundation to about 1200, when one might hypothesize that before Ragusa’s commercial and intermediary importance was built up enough to make diplomacy a credible option, military actions and costs may have needed to be much larger. Suggestive of this, Carter (72) mentions several early attacks and sieges. In 866-7 Ragusa withstood a Saracen siege of 15 months behind its fortifications “of rubble and beams”—note the word is “withstood” not “repelled” In the 14th century at different times King Uros of Serbia and Tvrtko of Bosnia are known to have considered capturing Ragusa, but were discouraged by the likely very high cost of breaching the defenses. According to Carter, Tvrtko decided instead to “defeat”
Ragusa commercially by founding a competitive trading port in the Kotor region, Sveti Stefan, no need to comment on its limited success.

We have found only one secondary reference to actual defense costs, by as shown in Fig.8. There is a little doubt that at this time, unless there were huge off-budget expenditures, Dubrovnik’s expenditures on defense at about 12% of the total budget, is far below that typically noted for other states. There is an excellent benchmark in the literature in the work of Bonney (95) which has collected a large amount of data on European states' budgets for the 13th-17th c; One of the volume’s key conclusions is that for most states military expenditure accounted for a very large share of at least about 20% to as much as 80% in times of conflict. Lane (73.p.426:) gives us some idea about military expenditures of Venice: in 1736 they were one-third of the total—after a sharp decline from preceding periods, when they must have been half or more.

For earlier periods secondary sources give only qualitative judgments that military costs were very low, or at best some fragmentary estimates that so many ducats or dinars were spent in a given year on reinforcement of the walls. As no total values on state expenditures for earlier periods are known to use as a benchmark such fragmentary hard data is of little value. While future archival research may permit a more definitive testing of the hypothesis about low expenditures on military purposes, for now we may nevertheless conclude tentatively that the limited evidence is consistent with the first half of HH10: Ragusa had relatively low military expenditures at least in the late middle-ages period of its most dynamic economic expansion.

IV (vi) b Diplomacy as Defense

Our evidence does support the consensus in the literature of relatively limited reliance on military force; this makes a good deal of sense only if it can also be demonstrated that diplomacy substituted for this. The logic is simple: once it is realized that Ragusa was not only very small, but its immediate backyard territory outside the walls was very hilly, had an extensive but very narrow perimeter, and was surely very difficult to defend with small numbers against the much bigger neighbouring states and potential enemies, the only alternative was more reliance on diplomacy. But the relationship should best be thought of as a circular reinforcement: early efforts to provide defensive walls and forces at the least discouraged attacks and/or gave time for negotiations, but the small size and indefensible territory led to emphasis on diplomacy and neutrality; the increasing success of diplomacy over time lessened the need for military efforts.

Cvjetovic in his introduction to Jirecek (1948, p.11) further connects this circle to the policies of favouring commerce, especially foreign trade:

“diplomacy and trade were the foundation stones of Dubrovnik’s freedom and greatness. For the development of trade one needs peace, order and security... Since Dubrovnik was not so strong, in order to compete with the mighty Byzantine Kingdom or the Venetians... and others – eventually the Ottoman
Empire, they grasped a first bit of national wisdom: go and make an arrangement with the neighbor who could inflict [upon you] heavy blows.”

Hard data on the extent of diplomatic activity does come in the form of budgetary expenditures, but only for the 1800 budget in Figure 8 we have already employed extensively. The data certainly supports the view with diplomatic costs totaling a huge 42% of expenditures: 11% for consular expenses (though note fees recouped for services to others yielded 6% of revenues), and nearly one-third -31.9% - for various tributes, “good relations”, diplomatic travel costs etc. However, these data may or may not be representative of earlier periods as we have noted in Sec. IV.ii.; indeed it would make sense that these represent a historical maximum, as in very early days defense efforts were more likely needed to establish a basis for trade and then diplomacy. Over time military/defense would then have declined proportionately, while diplomacy percentages could then rise. Nevertheless this very large share is striking.

The only other data evidence is quite indirect but equally striking. Several writers have pointed out Ragusa could actually profit commercially from wars between big powers by filling in the commercial gaps and needs created by diversion of their fleets to war. This was of course thanks to its effective multi-vector diplomacy allowing it to trade with many states who were mutual enemies. We reproduce as Figure 9 from Carter (1972) a graph of customs revenues data he compiled from the Archives 1500-1700, marking thereon the war periods which coincide very closely with revenue peaks.

We turn to the more extensive qualitative evidence. Ragusa’s use of diplomacy as a substitute is widely noted, indeed praised, by virtually all historians; among modern ones Berkovic (09-p.220) typifies the view:

“through timely awareness of their geopolitical position...Dubrovnik entered into numerous international political and trade relations[and was] able to utilize [this] wisely and skillfully in the defense of their independence, sovereignty and economic growth, resorting almost exclusively to diplomatic means and diplomatic skill.”

Berkovic and Carter both provide very detailed discussions of the many to and fro’s in Ragusa’s relations with their always-threatening neighbours. Carter (whose praise is very succinct: “In diplomatic affairs Dubrovnik was a past-master”), devotes four long chapters of the book to such diplomacy over the course of the centuries from the Byzantine protectorate until the creation of Yugoslavia after W.W.I. Here, we draw primarily on these two sources to give a selective representation of the sorts of diplomatic efforts undertaken...It should be added that one side of diplomacy was the

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130 Carter (72-p.118 succinctly defined these threats: “The republic was in constant danger from the powerful enemies which surrounded it on all sides. The Venetians who claimed the monopoly of the Adriatic { Venice’s version of the US Manifest Destiny doctrine was the”Mare Clausum”- the closed sea-aquar}...on the mainland the King of Serbia, the Ban of Bosnia, the Lord of Hum, all watching for an opportunity to occupy Dubrovnik whose splendid harbour they envied.” One might add incidentally that such envy also provides strong circumstantial evidence of Ragusa’s success.
purely commercial, consular representation in many states and cities with important trading volumes. We have discussed briefly the available quantitative evidence of such representation in II.(ii) above.

Figure 8.: Ragusa Customs Revenues 1500-1700

Source: Carter (1972, Chart XX, p. 272)

Ragusa withstood the aforementioned Saracen siege in 866-7 for 15 months thanks to its strong fortifications and preparedness, but it may not have come to a good end were it not for the appeal to Emperor Basil who sent a Byzantine fleet to relieve the city. A century later as Venice began to dominate the region de facto, Ragusa often yielded to some informal form of “submission”, accepting Venetian Counts and Archbishops, but formally continued to fly the Byzantine Imperial standard, and turned frequently to Constantinople diplomatically to offset the authority of Venice. This may mark the beginning of Ragusa’s skilful game of playing off one side against the other. About 1095, still under formal Byzantine protection, Ragusa turned to their enemy Venice to help ward off the incursions of King Koloman of Hungary. A hundred years later, in 1186, the Normans of Naples and Sicily occupied Ragusa, but the peace treaty negotiated most favorable and easy terms, with a Norman titular count, but all decisions of government to be made by the Great Council, no significant tribute

131 This and subsequent episodes noted in the paragraph are based on carter pp.51-74.
required, and other treaties with commercially-important allies like Miroslav Prince of the Serbs co-existed with the Norman one.

The diplomatic skills honed by Ragusans in this period of many conflicting but no overwhelmingly strong powers, stood them in good stead during the Venetian protectorate, 1204-1358. (See Carter Ch. 3, and Berkovic pp210-215). The very fact that a formal treaty of submission after the occupation of 1204 was not signed until 1232 implies the rather limited authority of Venice. Furthermore the Treaty was not very onerous, with a titular count from Venice but great autonomy retained by Ragusa, the flying of Venetian flag, a token financial and in-kind tribute, (less than a thousand ipperperi, far less than the annual income of a modest noble merchant). We have already mentioned the fairly soft demand that in war-time, Ragusa was to contribute one galley per 30 Venetian ones- and at that numerous instances are cited of Venice grumbling about the galleys coming late, being poorly armed or manned. The obligations of Venice to defend Ragusa and the trading privileges accorded were in contrast quite substantial. While many other states/nations were simply forbidden to bring goods to Venice and buy products for export to the Levant for example, Ragusa was allowed this, with the first four shiploads each year paying a low duty of 5% (20% on Egyptian imports which Venice wished to dominate), and a somewhat higher one for additional ships—though over time the cap was raised either formally or informally. Merchandise from the Balkan hinterland—which we have seen was in this period a very large part of Ragusa trade—was free of duty. The multi-vectoral game of Ragusan diplomacy takes on an almost bizarre complexity—Carter (72, p. 193) calls it “a maze of intrigue and counter-intrigue “during the Hungarian protectorate period., when the authority over Ragusa was even less strong than that by Venice, perhaps because the Kings of Hungary did not have the same critical interest in maritime trade. Ragusan authorities explicitly defined the policy in a diplomatic dispatch of the early 15th century: “[the Republic] had to be on good terms with these lords of Slavonia for every day our merchants and our goods pass through their hands.” But the big powers, Venice, Hungary and increasingly the Ottomans—could not be ignored either, so a constantly shifting web of treaties, explanatory legations in cases of dispute, began to develop in the 14th and 15th.c., including Venice, Hungary, Ottomans, Serbian Kings (Uros), Bosnian Bans (Tvrtko), and the dissident Bogomil leaders, Lords of Hum (approximately Hercegovina), the Balsas, Lords of Zedda (parts of Montenegro,Kosovo), To ensure trade with the Levant and newly occupied Balkan lands, Ragusa arranged a trade treaty with the Ottomans already in 1397, granting it free trade in the Balkans, and highly privileged terms elsewhere, with a minimal 2% import duty, and annual tribute of at first 500 ducats, increasing over time as needed and negotiated to the minimum possible. Stipetic (04.p.37) points

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132 A dissident Christian animist-like sect, excommunicated by Rome; one of their leaders, Vuk, brother of King Trvtko was given refuge in Ragusa in 1366. King Trvtko was duly received on a state visit with proper pomp, signed a treaty of alliance, but his demand for Vuk’s surrender was not granted, and Ragusa was not punished for this.

133 After Bosnian occupation 1436 this was raised to 1,000; in 1440 Ragusa gave refuge to Serbian Despot George Brankovic and to appease the Sultan offered to raise the tribute to 1,400; the fall of Constantinople in 1453 resulted
out the underlying commercial interests of Ragusa in securing such a treaty on one side, and at the same time by the “Basel edict removes the stumbling blocks from the Christian side.”

The ability to play off both Ottomans and Papal demands of allegiance is nicely shown by two diplomatic feats. In 1439 the Ottomans occupied Bosnia and Serbia and demanded of these tributes of 25,000 ducats – but also “invited” an envoy from wealthy Ragusa to come with a tribute. The envoy came but without a tribute; the Sultan imprisoned all Ragusa merchants on his territory as hostages. Lengthy negotiations resulted in Ragusa proposing a modest tribute of 1,000 ducats, accepted by the Sultan; merchants were released trading privileges as per the 1397 treaty were reinstated. (Carter p.200).

As the conflicts between Christendom and Ottomans intensified over the next century, Ragusa was ordered by Pope Paul III in 1358 to support the efforts of the Christian League, sever allegiance to the Sultan, cut trade relations, contribute a large sum to the war-chest and contribute five war galleys. Doing so would have surely been the economic death-knell of the Republic given its overwhelming reliance on trade in the Ottoman Empire. Her diplomats argued in Rome that doing this would only result in the complete destruction by Ottoman forces of their vulnerable city ‘with all her precious sacred relics falling into the hands of the Infidel without any advantage accruing to Christendom.” (Carter p.330), and hinting further this idea was a plot by Venice to destroy its commercial arch-rival. The Pope relented and exempted Ragusa from joining the League. 134

The height of complex many-sided diplomacy and intrigue is exemplified by Ragusa’s sobriquet in the late 16th.c of “Le Sette Bandieri” (The Seven Flags):

“Thus by her successful diplomacy Dubrovnik was under the aegis of seven different powers-Spain, the Papacy. The Empire of Naples. Venice Hungary, the Turks, and the Barbary Deys.” … although they often were in difficulties with some of their protectors, they could always play one off against the other.” (Carter p.333).

Not all diplomatic efforts succeeded to the same degree. As the economic centre of gravity shifted to West Europe and the Atlantic, Ragusa attempted to follow this, with increased trade with Spain, France, England, and even the Americas. When the American Revolutionary war led to US independence, Ragusa’s ever-cautious
diplomacy at first retained close ties to England—which had begun already in 16th.c as diversification to the West became imperative (see Ramsay (77). But in the same spirit of market diversity, Ragusa made a delicate outreach to the new country. This was, to apply anachronistically an American phrase, “a day late and a dollar short.” Trade with the USA did eventually take place but in a very limited and certainly not a privileged way. (Berkovic (09.p.217ff and Zivojinovic (77). At the end of its LIBERTAS, Ragusa, or better by now to say Dubrovnik, failed entirely in its demands to maintain some autonomy under French occupation in 1806. The Senate rejected virtually unanimously the possibility of allying with the Russians to avert French occupation, and the majority was against a proposal of Count Caboga (Kabuzic) to “embark our wives and our children and ask of the Sultan an island in the archipelago.” Deciding in favour of the French, they tried to negotiate continuation of de facto autonomy as of old, but French “indications” this would be granted came to naught and the Republic was fully disbanded as an entity becoming simply a municipality within Napoleon’s Illyrian province.

Arguably, both of these failures late in Ragusa’s history reflected the sharp decline of its strategic and commercial importance. The earlier success in diplomacy was not simply a matter of negotiating wisdom and skills, was most certainly not due as in some other states to military might, but was largely underpinned by a strong economic position.

But overall, the history of Ragusa’s diplomacy does support the underlying notion of HH10: substantial efforts and resources were devoted to diplomacy as a substitute for military and defense expenditures.

VI. SUMMARY OF FINDINGS AND FUTURE RESEARCH

We begin with a few general indications on potential future research—several concrete aspects having been noted in the main text such as the issues of why population declined in an economic boom period. The most obvious direction is to turn from secondary-source methodology we have employed here, to primary source efforts using the very rich archival sources of Dubrovnik, widely praised as among the oldest and most comprehensive in the region despite the small size of the Republic. Perhaps the first area to start with is on budgets in earlier centuries, given our findings that the very late 1800 data do confirm the prudence hypothesis and that while all indications for earlier centuries point in the same direction, this evidence is entirely qualitative. The power of more and earlier budget data goes beyond a verification of the prudence hypothesis since its components relate to the many claims about limited armed forces, reliance on diplomacy, and even on social expenditures. Given Ragusa’s wide trading networks, one would expect that other archives—in Italy, Ottoman Empire, Vienna, other Dalmatian cities—also contain considerable material. But given the wealth of the Dubrovnik Archives—whose extensiveness we have referenced in the text—that is surely the place to start.
Is it worthwhile to continue on our methodological path, searching more deeply in the secondary literature? In comparison to archival research this is a little like asking the question “should one invest in a high-tech undergound mine where geological evidence of large gold deposits is firm, or use the low-tech methods of panning for gold in probably gold-bearing streams? The answer of course depends on availability of time and resources—if these are at hand in large amounts, the primary source approach is advised; if not, there is nevertheless a good probability of finding more “gold”: in secondary sources. We do not say this lightly: the current paper should be considered as a second phase of research; in the first with an earlier paper, we found only quantitative information on economic proxies, and at best fragmentary “data” on institutions; in this second phase with more literature searched we have been able to compile a first set of “data” on institutions. Furthermore, the research process has been limited to literature that is accessible in our University Libraries and digital publications—which is to say almost entirely literature dating from at best the last four decades. Yet it is clear in bibliographies that a vast amount of writings on Dubrovnik in many languages is still there to be “panned.”

We turn now to summarise our findings. The stated aim of this paper comprised three points. First was to compile the best possible data-bank of economic activity proxies based on secondary sources and test common hypotheses about Ragusa’s economic success. Second to demonstrate with both quantitative and qualitative evidence that this success can be attributed to favourable institutions. The third point follows from the second—Ragusa/Dubrovnik is a good example of a very early Tiger economy, showing that today’s Institutional Paradigm is not that new and goes back to test the late mediaeval years.

While our time-series have many shortcomings, they are a first in the literature on Dubrovnik, and as posited they have been used to largely confirm—with minor modifications—the most common hypotheses in the literature about what happened economically in the mediaeval period. The quantitative evidence strongly confirms that the “Golden Years” of prosperity were indeed from the mid. 14th to the later part of the 15th c.—but probably lasting a bit longer than the common 1550. Similarly data confirm the view that carrying capacity for population was far below the 90,000 peak reached in 1500—the logic here being that a sharp population decline after that while the economy was booming can only be consistent with the fact that 90,000 was far in excess of real capacity. It is also confirmed that the period of decline is most likely attributed to the new sea route to the East after Vasco de Gama, which precipitated an unbeatable new competition by rising West European powers. On this too a slight modification is pointed to by the data—the decline was not at all immediate with Ragusa’s trade continuing to grow for nearly a century after Vasco de Gama. How they managed this might be an excellent future research topic—in effect a study of resilience to an external macro shock.

The hypothesis that Ragusa equaled Venice in maritime prowess may seems to be supported by shipping data around 1575, however this was one the special periods in Venice’s history with its fleet decimated by one of many wars. For most of the period
Ragusa had a smaller fleet, though in proportion to their populations, there is little doubt that Ragusa came surprisingly close to Venice, and the hard data does support the claims of it being perhaps the major rival of Venice despite its much smaller size. Finally we propose a new hypothesis not explicit in the literature and based on the work of Stuard: that the Silver period (about 110-1350) while far less prosperous it was economically extremely dynamic, laying a strong basis for the boom years to follow. The test is limited but all indicators are consistent with the hypothesis.

On the second point, the quantitative evidence is more limited, though that is also true of institutional vs. economic variables even today, a reflection of the less measurable nature of the former. Nevertheless, surprisingly even the secondary literature contains a lot of numerical indicators of the nature of the business climate with very early reliance on formal notarization and registration of commercial dealings and contracts, favourable legal process for bankruptcies, and efficient and relatively speedy court proceedings. With a few pieces of quantitative information complemented by innumerable qualitative assessments we find that virtually all the evidence one can muster, despite its "softness" points in the same direction. All five of our hypotheses on favourable institutions seem to be supported: fiscal and financial prudence; laws and regulation's friendly to commerce early establishment of formal and informal rule-of-law implemented effectively and in reasonable time; enlightened social policy for the mass of the population which provided stability; and limited military expenditures to maintain security with an alternative reliance on extensive diplomacy.

It is important to emphasise that the evidence on institutions is subject to many qualifications -as is typical in economic history works especially this far back in time- and that further research to improve the data is surely warranted. At the same time, we also wish to underline that the thrust of all of the pieces of evidence, as if in a logical phalanx, is virtually unanimous in its support of the main point: **Ragusa/Dubrovnik pursued wise policies on both the macro and micro level intended to ensure the greatest opportunities for trade and economic growth.** Our evidentiary phalanx is incomparably thinner than current statistics, along its line is variable in its strength, and has many gaps. Nevertheless, it all moves towards the same point, few if any of its parts would lead to contrary conclusions. It is this characteristic of our findings that points finally to the third point: Ragusa can serve as a good example of application of the Institutional paradigm more than half a millennium back, and deserves to be known as a historical lesson for current questions of optimal economic development strategies.