

## ***Interactive comment on “The extreme drought of 1842 in Europe as described by both documentary data and instrumental measurements” by Rudolf Brázdil et al.***

**Rudolf Brázdil et al.**

brazdil@sci.muni.cz

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Interactive comment on “The extreme drought of 1842 in Europe as described by both documentary data and instrumental measurements” by Rudolf Brázdil et al.

Anonymous Referee #3

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This is a historical climatological work of high quality based on an impressive amount of data and I recommend it to be published after minor revisions. RESPONSE: Many thanks for your recommendation.

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In particular, it conforms to the current trend of combining different types of sources. Such source pluralism though, especially when the object of study belongs to modern times, entails rather superficial or non-existent assessments of the quality of the sources, particularly the documentary evidence. Some words about the problems connected to such anthropogenic sources would be appropriate. The present disposition of the article also allows for that in a pedagogical sense; the documentary sources (2.1 Documentary data) are presented first under 2 Data, and the not unequivocal reliability and representativity of these makes the following presentation of instrumental data the more relevant since the complementarity and usefulness of both source categories become clear. RESPONSE: Accepted, we extended the first paragraph of Section 3 reporting the work with documentary data as follows: “Documentary data extracted from the basic sources described in Sect. 2.1 were first critically evaluated with respect to the credibility of sources, their dating and the contents of the reports. Because of possible exaggeration of drought and its consequences and impacts (e.g. in newspapers), the content of every report was carefully evaluated with respect to described events and in case of doubts checked with other sources, also in temporal and spatial context. It concerned also some confrontation of documentary data with measured meteorological variables. If any such report was identified as doubtful, it was excluded from further analysis. In further checking of reports obsolete place-names were converted into their recent, more accessible form and the corresponding country added. Documentary data, by nature of a qualitative character, were employed, in particular, to descriptions of the character of hydrological, agricultural and socio-economic droughts from the point of view of environmental and societal impacts, as well as human responses.”

The discussion about prices (pp 16f) is interesting but also highlights the problems connected to the use of prices to shed light upon climatic extremes. The authors are rightly cautious but the problems could be stressed even more. The climatological signal from agricultural prices is hard to detect without identifying and eliminating the ‘noise’ in the data and depends on whether market mechanisms are allowed to operate

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freely, the degree of long-distance market integration etc, all of which is especially true for pre-industrial Europe when market demand for basic foodstuffs varied very little in the short run in contrast to supply. Some of these aspects are indeed mentioned in the present article and cannot be fully addressed there. But I would suggest that the clearly more significant importance of agricultural yields over agricultural prices should be recognized. RESPONSE: The referee is essentially right, but for us prices have no huge relevance, exactly because it is clear that the “noise” strongly smoothens the effects of bad harvests on prices. To explain all “noises” behind in such a broad region is the task which could be done properly only by particular economic historians, specialised on this period and dealing only with one country or region because of the complexity of the causative reasoning behind prices in this late period. Only very few economic historians dare to make Central European or other supra-regional analysis or conclusions. And since no such detailed economic historical analysis of the period is available, it is rather difficult to see through all possible reasons and mechanisms that influenced prices in all these regions in this detail. In response, at least, partly to this comment, the fourth paragraph in Section 5.3 was complemented as follows: “The fact that no particularly outstanding price increases for base products occurred in either Prague or Vienna could result from a number of factors and administrative strategies or decisions. One important influence was the mass storage of grain in royal/regional granaries; such a reserve could buffer the effects of at least one bad harvest (e.g. Jelenkor, 3 Sep. 1842). Similar to Hungary, this factor was present at that time also in other discussed countries (e.g. France, Germany, Czech Lands, Austria) which had, for example, granaries and an intensifying trade of basic agricultural products. It was also significant that the official market prices of major food products (meat, cereals, etc.) were fixed by regional authorities.”

Finally, some small linguistic details: Page 2, line 3: “droughts events” should be replaced by “drought events” RESPONSE: Accepted and corrected.

Page 8, line 35: “positives modes” should be replaced by “positive modes” RE-

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SPONSE: Accepted and corrected.

Page 13, line 1: “led a critical situation” should be replaced by “led to a critical situation” RESPONSE: Accepted and corrected.

Page 13, line 35: “permitted” should be replaced by “prohibited” (or something similar) RESPONSE: Accepted. We add “not permitted”.

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