



Interactive comment on “Social vulnerability to climate in the “Little Ice Age”: an example from Central Europe in the early 1770s” by C. Pfister and R. Brázdil

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General comments:

The paper addresses an important and since quite a time hotly discussed problem in economic and social history: the vulnerability of European societies/regions to climate extremes during the so-called “Little Ice Age”. To evaluate the impact of adverse climate situations the authors draw on examples from Switzerland and Bohemia 1769–1772, i.e. the last great subsistence crisis in Central Europe in the early modern period.

Concerning the overall structure of the paper (sources on climate from man made archives – methods of climate reconstruction and impact analysis – modelling Little Ice Age-type impacts – differences in social vulnerability in Switzerland and the Czech

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Lands in the early 1770's), I have almost nothing to comment on the first and second sections. Both authors are eminent experts in this field of research and their presentation is sound and comprehensible, but there is nothing new here what has not been written by them on other occasions. Concerning impact analysis I found the total reliance on only one model (Kates' cascade of effects – p. 132s. and fig. 2) rather limited. There are quite a lot of other attempts to theorize and investigate the impact of climate on economy and society, usually addressed within the context of research on the causes of famines, which are worth consideration (e.g. M. J. Watts and H. G. Bohle, The space of vulnerability. The causal structure of hunger and famine, in: Progress in Human Geography 17/1 (1993), 43-67. B. Murton, Famine, in: K. F. Kiple and K. C. Ornelas (eds.), The Cambridge World History of Food, Cambridge 2000, vol. 2, 1411-1427, gives an excellent overview of this literature).

In section 4 a new concept – the Biophysical Climate Impact Factor (BCIF) – is introduced. Instead of getting an explanation about the way this 'factor' has been constructed, the reader is referred to another paper by Ch. Pfister, which is in press. This is slightly frustrating and one can only suppose that this way of presentation was chosen for lack of space.

In section 5 the concepts and methods so far introduced are tested by comparing the impacts of a sequence of disastrous grain harvests in the Swiss canton of Bern and the Czech lands in the period 1769 to 1771/72. Unfortunately this section makes up for less than a third of the entire text. The description of the social and economic impact of these deficient harvests in the Czech lands relies exclusively on an article published by Brázdil et. al. in 2001. It is certainly not the fault of the authors that the subsistence crisis in the Czech lands in the early 1770s is heavily understudied given the wealth of archival sources available (see the references in R. Brázdil et. al., Die Hungerjahre 1770-1772 in den böhmischen Ländern, in: Österreichische Zeitschrift für Geschichtswissenschaften 12/2 (2001), 44-78; and Erika Weinzierl-Fischer, Die Bekämpfung der Hungersnot in Böhmen 1770-1772 durch Maria Theresia and Joseph

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II., in: Mitteilungen des Österreichischen Staatsarchivs 7 (1954), 478-514), but from the perspective of economic and social history this unbalance in the overall structure of the paper has its price.

The main conclusion drawn by the authors, namely “that social vulnerability of this canton (i.e. Bern) was less pronounced than in the Czech lands. This is largely due to the inherent properties of the two political systems” (p. 143), brings as back to a remark in the introduction where it is stated that “the vulnerability of past agriculture and people to extreme climatic events (. . .) is a non-topic” for many economic historians. Among others Robert W. Fogel is cited with his contention that “famines were caused not by natural disasters but by dramatic redistributions of ‘entitlements’ to grain” (R. W. Fogel, *Second Thoughts on the European Escape from Hunger. Famines, Chronic Malnutrition, and Mortality Rates*, in: S. R. Osmani (ed.), *Nutrition and Poverty*, Oxford 1992, 255). As far as I can see, it is not the case that many economic historians do not care about the impact of extreme climatic events on economy and society. They have, however, strong reservations against argumentations which attribute the causes of famines and mortality crises solely or primarily to the impact of bad weather and prefer explanations based on socioeconomic structures and the political economy of the societies concerned. It is nevertheless correct that they have until so far paid much less attention to the now well established fact that there were periods or clusters of climate anomalies in the past which could trigger massive social, economic and demographic disturbances. Therefore it is important that two eminent historians of climate argue that the political economy of the two regions compared here determined the degree of vulnerability to the impact of extreme climatic events. This is a decisive step forward in bridging the gap between these strands of research and I can only welcome their statement that “more comparative studies of socio-environmental interactions should be encouraged” (p.143).

Specific comments

Page 143, lines 15-17: “(. . .) it seems that the Hapsburg monarchy and its adminis-

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tration were ill-prepared to face the formidable challenge of three successive harvest failures in a distant province.”

Bohemia was certainly NOT “a distant province” of the Habsburg monarchy, neither in geographical (Prague is in a distance of 300 km from Vienna) nor economic terms (parts of Bohemia count among the development centres of the monarchy during the second half of the 18th century). During the crisis years discussed in this article core-gent Emperor Joseph II. undertook a six week travel trough the Bohemian lands to investigate the causes of the famine. He left an extensive travel diary full of information on the situation in different parts of Bohemia.

Page 143, lines 17-18: “Moreover, the oppressive feudal structure could be changed easily because they were indispensable for the maintenance of the political system.”

If I got it right, the word “not” should be introduced between “could” and “be changed”. Otherwise the phrase does not make sense.

The second part of the 18th century was a period of reforms in the Bohemian lands. There are strong hints that besides the “oppressive feudal structure” it were the radical mercantilist policies (blocking of the export of raw materials etc.) which caused severe economic problems in some parts of Bohemia, especially in the northern, protoindustrial regions of the country. The envoy of the court in Vienna, Baron Kressel, who was sent on an inspection of the situation in Bohemia and Moravia in spring 1771 reported that it was not the lack of grain but the inability of the inhabitants of theses regions to by grain which caused the famine. (See Fischer-Weinzierl, *Bekämpfung*, p. 512.)

Figure 6: Chart – Czech Lands: “baptisms” or “births”, NOT “conceptions”.

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