

## History by Numbers

### E-Learning Modules for MA Courses in Economic History

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Our project aimed at intensifying ongoing collaboration between the only two Swiss universities offering a MA degree in economic history (see: [www.histecon.uzh.ch/de.html](http://www.histecon.uzh.ch/de.html) and [www.unige.ch/sciences-societe/IHEPB/etudes/master/](http://www.unige.ch/sciences-societe/IHEPB/etudes/master/)). After relaunching in March 2018 the Historical Statistics of Switzerland Online ([www.hssso.ch](http://www.hssso.ch)), a database offering unique perspectives on long-term socio-economic development in Switzerland, our two institutes started to develop “History by Numbers”. This is a joint online course to familiarize students from both universities with the application of quantitative methods – skills, which history students with a background in humanities often lack when entering our MA courses. At the same time, students of economics entering our MA courses have seldom been trained to question the explanatory power of their data, models, and analyses. History by Numbers thus aims at underscoring the potential of empirical research with historical data, on the one hand. On the other, it trains how to implement quantitative research in a historical setting in accordance with state of the art methods in the humanities. By working with already digitized historical datasets originating from databases such as the HSSO and others, and by creating new datasets from historical and archival sources, we aim at helping students to question and finally overcome disciplinary barriers so that economists can understand historical data, and historians can implement quantitative methods in their analyses.

In this collaborative project, we conceptualized and collected the content for the first two introductory modules planned for “History by Numbers” (Module 1: Data Research and Module 2: Data Preparation). Both modules focus on data research and data preparation, and will be part of a larger e-learning course, some of which will be based on a revision/re-launch of the Economic and Social History Online (ESO) e-learning tool developed at UZH more than a decade ago and discontinued in 2014 due to IT compatibility reasons. ESO had been used in several economic history courses at the UZH and the University of Berne, and its deactivation has left a void that needs to be filled. Additional modules will include sessions on descriptive statistics, linear regression, causal analysis, visualization of quantitative historical information, and reproducible research. Following the principles laid out in this first stage, these developments will be made available to all interested users in English, to avoid complex and costly translations. As these modules exploit Swiss datasets (notably the HSSO), they will also serve as an introduction on Swiss long-term statistics for international users.

#### Autumn/Winter 2018-2019: Preparatory steps

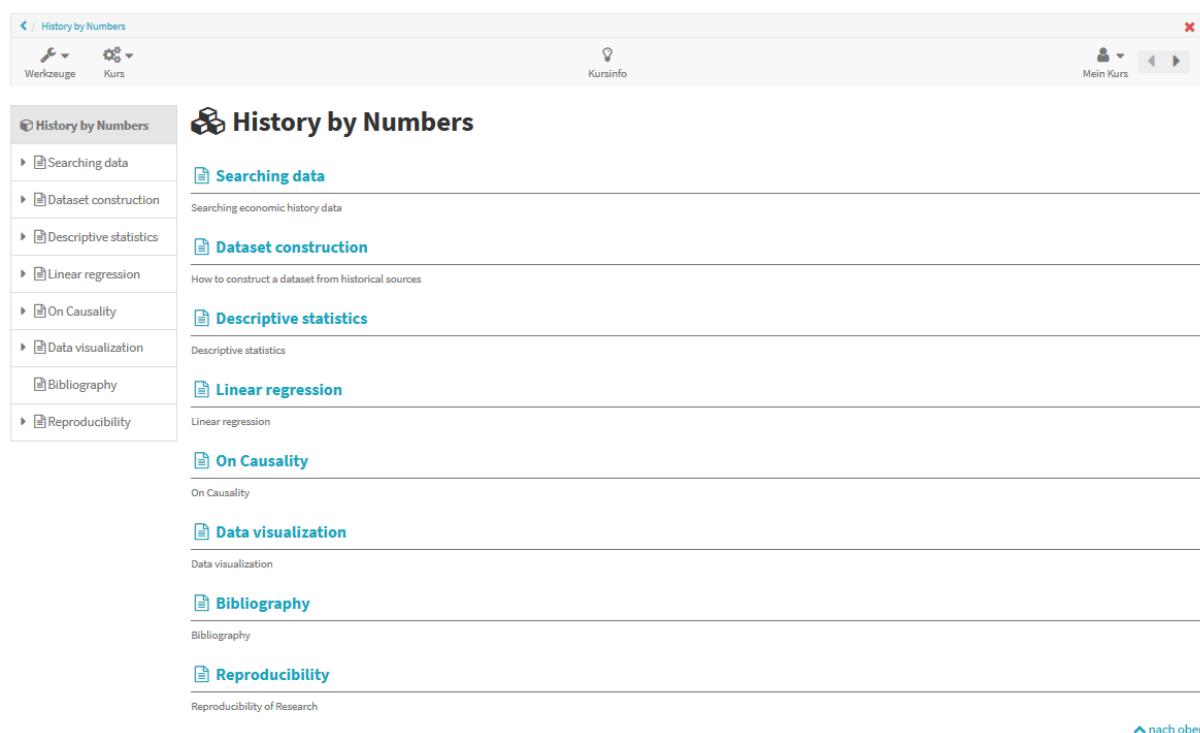
**General module structure.** At the beginning of the project process, we decided to organize the first two modules according to the following general structure:

1. Guiding question: What? → Topic of the module
2. Method: How? → Method(s) used in the module
3. Understanding: Why? → Why and when does it make sense to use this method in economic history research
4. Do It Yourself: Self-assessment → Exercises applying the method

In Module 1 (Data Research), these questions focus on searching and finding data needed for analyses while Module 2 (Data Preparation) deals with challenges linked to how to transcribe and prepare such data for analyses. Both modules contain a section devoted on the critical assessment of sources and data in economic history in general, along with a selective bibliography dealing with core issues. In combination with a clear guidance for project management on how to store data transcribed for analysis, this structure will help to ensure the reproducibility of research in quantitative history.

**OLAT as basic platform.** We chose to implement the project on OLAT, the learning management tool developed at UZH (see: <<https://www.elearning.uzh.ch/de/E-Learning-Werkzeuge/lms/olat.html>>). OLAT is module- and html-based, which enables us to ensure digital flexibility and sustainability with regard to future progress in technology – which was the key hurdle faced by the earlier version of the ESO project. Additionally, thanks to the AAI institutional login (Authentication and Authorization Infrastructure, see: <[www.switch.ch/de/aai](http://www.switch.ch/de/aai)>) managed by Switch, users from all higher education institutions in Switzerland – including UNIGE – are automatically granted access to OLAT. With regard to offering potential access to a wider audience within and beyond Switzerland, we aim to open “History by Numbers” for guests after thoroughly testing the modules in our respective courses at UZH and UNIGE. That is why we already translated the existing modules in German to English, also facilitating cooperation between our two institutions. Aside from translating already existing ESO modules, we also started to reorganize them in accordance with the overall structure.

Figure 1: Currently planned modules of “History by Numbers”



**Workshop at the University of Geneva in April 2019.** These first preparatory steps helped us to prepare and present our initial work in early April in Geneva. During this meeting, we met with Profs. Pilar Nogues Marcos and Mary O’Sullivan as well as with their MA students to discuss our concept and ideas for the first two modules. This meeting proved to be very efficient and fruitful. While presenting the general structure and idea of the e-learning-tool, many common experiences, issues and problems in teaching quantitative economic history came up for discussion.

Core questions discussed were the following:

- Organizational issues: Is the e-learning tool to serve as a stand-alone and/or a blended learning tool? How much time will the study of single modules take? Can we offer ECTS-credits for them, and if yes, how many?
- How can we address diverse audiences – with either history and/or economic background? Both at UZH and UNIGE, our Master degrees usually attract people with a BA background in either history or economics, and very often lacking specific historical and/or economic skills necessary for our Master courses.
- How much economic theory is needed? Is it possible to both explain and criticize theoretical approaches in the same modules?
- Is the UZH-based OLAT tool acceptable to UNIGE as well?
- On which statistical software should analyses be based?

As a consequence, we agreed on the following needs which History by Numbers modules should meet:

- Historians ought to use quantitative methods to answer and/or explore specific research questions. The modules ought to familiarize them with these methods to overcome the too-often present reluctance towards quantitative methods.
- Economists ought to use historical data to think creatively about current theoretical debates and not simply as a simple “resource” to be mined and mixed.
- In general, we want to underline how quantitative historical methods can shed new lights on theoretical issues in economics.
- It would be rewarding to use historical and/or economic debates as motivations and/or entry points for each module topic (e.g. inequality, living standards etc.)
- The students should really be encouraged to apply their theoretical knowledge: They should understand the advantages of using analysis tools and software for economic history
- We are going to use “R” (see: <[www.r-project.org](http://www.r-project.org)>) as analysis tool as it is open source-based.
- The students should really be applying their econometric knowledge. What can they do with data?
- Using the e-learning tool in blended learning would enable students to learn economic theory through exercise modules, and then apply them in the classroom.
- As OLAT is open for all students at Swiss universities and kept up-to-date, it will be our choice as platform.

**Work undertaken after the Geneva workshop: Further plans and development ideas.** With the beneficial input of this joint workshop, we then decided to focus our modules on an audience of MA students in economic history, building on their skills, and enhancing them towards the intuitive application of economic theory on historical questions. We also discussed and collected potential sources which will be used as examples in the two modules. Thanks to the UNIGE input, we then decided to use different types of sources (see Fig. 2 below) according to the respective module topic like wage data, 19<sup>th</sup> century army recruits pedagogical exams, early modern mercenary lists, census data etc. We have also initiated a cooperation with the UZH *Ad fontes* platform (<[www.adfontes.uzh.ch](http://www.adfontes.uzh.ch)>), in which we plan to implement an exercise for the transcription of tabular sources to a spreadsheet software. Since 2001, *Ad fontes* has been developed at UZH as an online introduction to epigraphy and, more generally, to working with mostly medieval and early modern archival sources. It is a pioneering digital humanities project, which is very much interested to expand to contemporary sources.

During the fall semester 2019, we are going to test the first two History by Numbers modules in the UZH course “Methods in Quantitative Economic History”. As these two modules aim at thorough data research, they fit well into the curriculum of the course. Additionally, we are going to present and discuss History by Numbers in Prof. Matthieu Leimgruber’s MA thesis workshop in order to gather advanced students ideas and needs. In the spring semester 2020, we aim at testing the two modules alongside with relaunched ESO modules in the UZH MA course “Introduction to quantitative Methods for Historians”. At UNIGE, we also plan to test these modules in the spring of 2020 in a new eponymous course. “History by Numbers” will serve as a bridge between our two economic history curricula and will serve as a catalyst for further collaboration between the UNIGE and UZH.

Figure 2: Introductory overview of potential economic history sources in Module 1

History by Numbers	<b>Data sources in economic history</b>
▼ Searching data	With our focus on machine-readability and statistical analysis of data, we distinguish among four different categories of data sources:
Introduction	1. Already digitized and machine readable (found online and/or via library database catalogues)
<b>Data sources</b>	<ul style="list-style-type: none"> <li>• Historical Statistics of Switzerland Online (<a href="#">HSSO</a>)</li> <li>• Elites suisses (Lausanne University, <a href="#">Élites suisses</a>)</li> <li>• Maddison Historical Statistics (<a href="#">Maddison</a>, worldwide)</li> <li>• OECD “How Was Life” (<a href="#">How Was Life</a>, worldwide)</li> <li>• NBER Macrohistory Database (<a href="#">FRED</a>, mainly US data)</li> <li>• Databases of international organisations like <a href="#">OECD</a>, <a href="#">IMF</a>, <a href="#">World Bank</a></li> </ul>
How to find data	2. Digitized sources (found online and/or via archives' catalogues, printed or transcribed)
Issues and challenges	<ul style="list-style-type: none"> <li>• Church records (e.g. canton <a href="#">Schaffhausen</a>)</li> <li>• <a href="#">Stapfer-Enquête</a> (historical school survey of 1799)</li> <li>• Government protocols (e.g. Swiss Federal Archives: “<a href="#">Amtsdruckschriften/Publications officielles numérisées</a>”)</li> <li>• Zurich state archives: «<a href="#">Digital verfügbare Bestände</a>»</li> <li>• Geneva city archive: «<a href="#">Compte rendu de l'administration municipale 1842-2000</a>»</li> <li>• Statistical yearbooks (e.g. Statistical Office of <a href="#">Switzerland</a>, city of <a href="#">Zurich</a> and <a href="#">Berne</a>)</li> </ul>
Self-Assessment	3. Printed sources (found via library catalogue search):
Summary	<ul style="list-style-type: none"> <li>• Statistical yearbooks (e.g. city of <a href="#">Basle</a>)</li> <li>• Historical statistical descriptions of certain countries, regions etc.</li> <li>• Older data collections of international organizations (e.g. League of Nations (at <a href="#">UNO in Geneva</a> and partly via <a href="#">Northwestern University Digital Library</a>))</li> <li>• Schweizerisches Finanzjahrbuch</li> <li>• SUVA: Ergebnisse der Unfallstatistik der ... fünfjährigen Beobachtungsperiode</li> <li>• Diverse anniversary publications of enterprises, firms, and associations</li> <li>• Newspaper archives and union archives</li> </ul>
Bibliography	4. Handwritten sources (found via archives' catalogue search):
Dataset construction	<ul style="list-style-type: none"> <li>• Rolls of local market prices</li> <li>• Balance of accounts of public or private institutions (e.g. <a href="#">abbey records</a>)</li> <li>• Pay rolls of public or private institutions</li> <li>• Private collections of household accounts</li> </ul>
Descriptive statistics	<b>These lists are NOT meant to be exhaustive!</b> They include the most widely used databases in economic history both in a transnational, and in a more specific Swiss context.
Linear regression	To keep ESO up-to-date, we welcome suggestions of additional databases and sources covering Swiss data. Please contact <a href="mailto:history.numbers@uzh.ch">history.numbers@uzh.ch</a> .
On Causality	
Data visualization	
Bibliography	
Reproducibility	

## Contribution

By using expertise accumulated at the Universities of Geneva and Zurich in the domain of economic history, our project will help to teach the basics of quantitative analysis to new generations of students. These students will learn to use existing data sets as well as to prepare new data sets from the wealth of archival sources available in Switzerland. In the medium-term, such data sets could be used to complement and/or expand the HSSO platform, our initial collaborative project, enabling future sustainable data management in historical sciences. The extension of the HSSO database will thus be contributing to internationally recognized research in digital humanities and economic history.

The HSSO collaboration has already had – and will continue to have – positive spillover effects on other UNIGE-UZH collaborations in the domain of economic history such as student and professor exchanges, common workshops and doctoral meetings, etc. Although some activities have already been underway since 2015 at an informal level, this project has definitively fostered a more institutionalized cooperation, since it is going to be maintained and further developed over the next semesters and years.

By pooling e-learning resources for the two only MA level degree in economic history offered in Switzerland, the project will help to strengthen the digital leadership of both institutions in the national context, with a strong focus on innovative and reproducible research in Swiss economic history.