

# FREE FOR ALL

## Open Educational Resources for Economics

The open content revolution is making millions of cultural works — images, videos, music and even feature films — available under "copyleft" licences that allow sharing and reuse

In education, this movement takes the form of **Open Educational Resources**; an approach to sharing and collaboration that is catching on around the world.

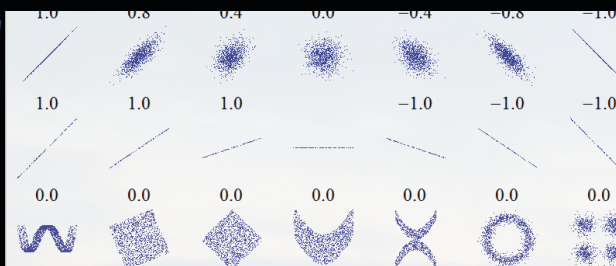
Open resources are "free" as in "free speech" as well as in "free lunch". Your rights to redistribute and even adapt are guaranteed, so long as you credit the source.

Many hundreds of high-quality open educational resources have been created specifically for economics.



The Standard Deviation: The Formula

Step	Operation	Formula
One	Difference between the value and the mean	$x - \bar{x}$
Two	Square the differences	$(x - \bar{x})^2$
Three	Sum the squared differences	$\Sigma(x - \bar{x})^2$
Four	The average of the squared differences (this is the variance, $\sigma^2$ )	$\frac{\Sigma(x - \bar{x})^2}{n}$
Five	Take the square root of the variance	$\sqrt{\frac{\Sigma(x - \bar{x})^2}{n}}$



Open content lets us build on others' work, so long as we credit them.  
Images from top:

Stills from the DeSTRESS films "Index Numbers" and "Variance and Standard Deviation"  
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Illustration of linear correlation given by its author to the Public Domain, so there are no copyright restrictions. Available through Wikimedia Commons.

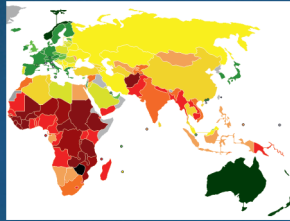
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# The World of Open Content

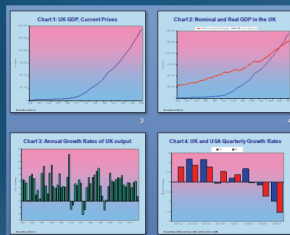
**Flickr.com** has 195 million images freely available under Creative Commons, including some restricted to non-commercial use.



**Wikimedia Commons** has nearly 11 million photos, diagrams, video clips and audio recordings, which can even be used in commercial projects. This site is focused on media with an educational purpose.



**Jorum.ac.uk** is a national archive of openly-licensed learning materials, with more than 11,000 resources made by, and for, Higher Education. Hundreds of these are relevant to economics.



**Educational projects** came to prominence with US efforts such as MIT OpenCourseWare, but now many UK universities, subject-based projects and individual academics are opening up their resources. Almost every country with a higher education system, from China to Rwanda, now has Open Educational Resource projects.



From top:  
"Night Refinery" by dawolf on Flickr, CC Attribution; "UN Human Development Report 2010" by Kirbyn Joel Berrios, Public Domain; Slides from "Working with Data on Economic Growth" by Dean Garratt and Stephen Heasell, CC Attribution-NonCommercial; Diagram from JISC/ HE Academy OER InfoKit, CC Attribution-ShareAlike

Contact the Economics Network  
<[econ-network@bris.ac.uk](mailto:econ-network@bris.ac.uk)> to add your own materials to a showcase

## Some benefits of sharing Open Educational Resources

**Saved time and effort**

**Spread of good practice**

**Advertising for courses**

**Informal benchmarking**

**Support for self-study learners**

**Individual portfolios of teaching materials**

**Attracting international students**

**Collaboration**

**Public outreach**

**Help for education in the poorest countries**

# Maths and Statistics Resources

**Depository of Statistical Resources for Social Sciences** is a new site with a variety of “pick and mix” resources for teaching statistical concepts. These include:

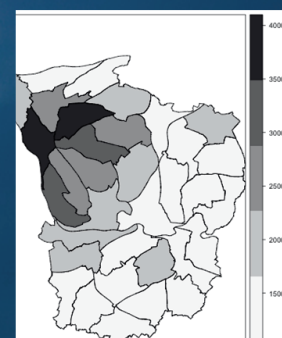
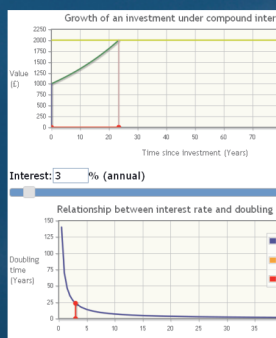
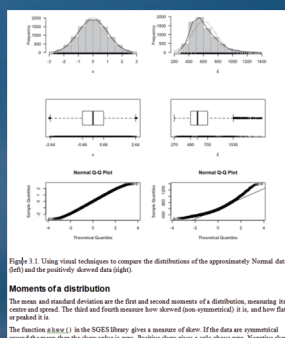
- **Professionally produced videos**, combining live action with animation to show real-world applications of statistics.
- **400 interactive assessment questions**, each parameterised to generate thousands of variations.
- Interactive graphs, handouts, booklets and lecture slides.

The DeSTRESS consortium is led by Rebecca Taylor (Nottingham Trent University), and includes Ken Heather (University of Portsmouth), Martin Greenhow (Brunel University) and Martin Poulter (The Economics Network)

## DeSTRESS



Above: from the DeSTRESS film “Index Numbers”  
Below: booklet by Rich Harris, interactive chart by the DeSTRESS project: all Creative Commons Attribution-ShareAlike-NonCommercial



[destress.pbworks.com](http://destress.pbworks.com)

**me:TaL** Mathematics for Economics: enhancing Teaching and Learning

**Project summary**

"A resource created by economics lecturers, for economics lecturers."

**The Project Team**

Find out more about the team who developed METAL.

**Contacts**

Contact details and links to related sites.

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**Resource room**

METAL provides a 'pick and mix' range of FREE teaching and learning resources aimed at students and lecturers in Mathematics for Economics. There is no site subscription or registration.

- Video to watch online or download
- Teaching and Learning Guides
- Question Bank
- Case Studies

The METAL Project offers a similar set of resources to DeSTRESS, focusing on **economic applications of mathematics**, and is already used in universities around the world.

METAL resources include more than fifty video clips to watch on YouTube or download.

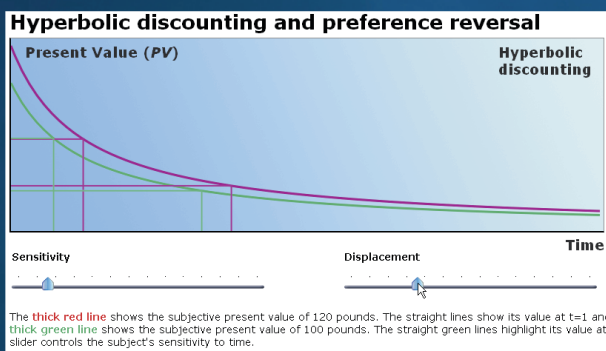
There are also interactive assessment questions and case studies.

[www.metalproject.co.uk](http://www.metalproject.co.uk)

# Resources for Specialisms in Economics

**The Economics Network** runs fifteen sites sharing open educational resources, with an emphasis on second- and third-year undergrad modules. Each site is led by a senior academic in the relevant field.

The resources include course handbooks, student handouts, assessment materials, classroom experiments, and seminar exercises.



Other open resources hosted by the Economics Network include CBA Builder (a new set of materials for teaching Cost Benefit Analysis) and The Internet for Economics, a tutorial showing students how to make best use of the internet.

[economicsnetwork.ac.uk/projects/true](http://economicsnetwork.ac.uk/projects/true)

## Subject areas

**Development Economics**

**Econometrics**

**Environmental Economics**

**European Economics**

**Experimental Economics**

**Health Economics**

**Heterodox Economics**

**International Economics**

**Industrial Economics**

**Labour Economics**

**Law and Economics**

**Money, Banking & Finance**

**Public Sector**

**Regional & Local Economics**

**Risk and Uncertainty**

DeSTRESS is funded by the **Higher Education Academy/ JISC Open Educational Resource programme**.



Booklet created by Martin Poulter for DeSTRESS. Published by the Economics Network, University of Bristol  
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