VerTeX User's Manual

by

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Abstract. This documentation describes VerTeX, a package of TeX macros that will produce beautiful working papers, and allow you to simulate final versions in a variety of journal styles.

Keywords. TeX, typesetting, economics

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VerTEX User's Manual

Hal R. Varian

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There are several TEX macro packages already available, so why is one more necessary? Basically I felt that there was a need for a simple, flexible package that added a minimum amount to `PLAIN.TEX`, and yet still provided useful features for writing technical reports.

VerTEX will help you to **V**isualize **E**conomics **R**eports using TEX. VerTEX will produce nice looking preprints and will aid in formatting your bibliography, but it will also produce simulated journal styles for a variety of economics journals. It is very easy to add new journal styles to VerTEXfor someone who knows a little bit of TEX.

1. VerTEX Commands

The easiest way to show you VerTEX's commands is to show you the start of this paper. It looks like something like this:

```
\magnification=\magstep1
\input vertex
\input ppt.sty

\topmatter
 \title{Ver\TeX\ User's Manual}
 \author{Hal R. Varian}
 \affil{University of Michigan}
 \abstract{This documentation describes Ver\TeX, a package of \TeX\
macros that will produce beautiful working papers, and allow you to
simulate final versions in a variety of journal styles.}
 \keywords{\TeX, typesetting, economics}
 \address{Prof. Hal R. Varian, Department of Economics, University of
Michigan, Ann Arbor, MI 48109, U.S.A.\ \  Internet address: {\tt
Hal\_Varian@UM.CC.UMICH.EDU}}
 \thanks{Thanks to Kari Gluski, the participants of {\tt tex:forum},
the members of the Economics Department at the University of Michigan,
and all the \TeX\ hackers who made this work possible.} \date{August,
1986}
 \version{\today}
 \prelim
 \endtopmatter
 \document

There are several \TeX\ macro packages already available, so why  is
one more necessary?  Basically I felt that there was a need  for a
simple, flexible package that added a minimum amount  to {\tt
PLAIN.TEX}, and yet still provided useful features for writing
technical reports.
```

That's pretty simple, isn't it? The only extra feature that you need to know is that you can put `\cr` into the `\title` macro if you want to split the title into two or more lines, as in

<center>

`\title{A very, very, very, very \cr very long title}`

</center>

Thanks to Kari Gluski, the participants of `tex:forum`, the members of the Economics Department at the University of Michigan, and all the TEX hackers who made this work possible.

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If there are two authors of a paper, use the commands

$$\text{\textbackslash authortwo\{The Name\}\textbackslash affiltwo\{The University\}}$$

The `\thanks` should come *before* the `\author` and `\title` keywords, if the style you are using attaches the thanks as a footnote to the author or title.

What if there are more than two authors? In that case you are on your own, except in the preprint style. There you can do something like:

```
\author{A. Winken \cr {\it MIT} \cr B. Blinken \cr
   {\it University of California} \cr {\rm and} \cr C. Nod \cr
   {\it University of Michigan}}
```

This will set the authors and affiliations up the way you want them. Be sure to leave the `\affil` box out if you do this trick. I intend to provide better support for multi-authored papers in the next release of VerTeX.

When you want to start a new section, you type

$$\text{\textbackslash section title of the section \textbackslash par}$$

and when you want to start a subsection you type

$$\text{\textbackslash subsection title of the subsection \textbackslash par}$$

VerTeX will handle the section numbers for you, automatically numbering each section as required.

You can enter footnotes by using the construction

$$\text{\textbackslash fnote\{This is a footnote\}}$$

and you get a footnote.[1] If at the end of your document, you type `\PrintEndNotes`, TeX will print out an end page with all your footnotes on it, for those journals who just have to have it.

If you want the paper to be double spaced, put `\doublespace` between `\endtopmatter` and `\document`. This way the cover will come out single spaced and the document will come out double spaced, which is what people usually want.

If you are in doublespace mode and want to put a paragraph in single spaced mode for some reason, type `\singlespace`. The document will now revert to single spaced mode until you enter `\doublespace` again.

One common reason to want to use single spacing in a doublespaced document is for long quotes. VerTeX provides this via the command `\quote`, as in `\quote{Four score and seven $\ldots$}`.

2. Extra Goodies for Math and Figures

But there are more goodies in VerTeX. For example, you can attach *names* to equations, and have TeX automatically number (and renumber!) them for you. To use this feature you type something like the following when you first introduce an equation:

$$\text{\$\$e = mcˆ2\textbackslash eqno\textbackslash Equation\textbackslash Einstein\$\$}$$

and then when you want to reference it, you say

$$\text{...as in equation (\textbackslash Einstein).}$$

The same sort of thing works with figures. When you first reference a figure, called, say `\MonaLisa`, you type `\Fig\MonaLisa`. TeX will assign the next figure number to it and enter "Figure 2" (or whatever) in the text. At the end of the paragraph, or roughly where you want the figure to appear, you type

$$\text{\textbackslash Figure\textbackslash MonaLisa\{2in\}\{The great painting Mona Lisa.\}}$$

---

[1] Like this!

The three arguments to the `\Figure` macro are: (1) the figure name, (2) the vertical size of the figure, and (3) the caption for the figure. TEX will insert the figure using the `\midinsert` command, so it will appear on the page you ask for it if there is room, and otherwise float to the top of the next page.

There are couple of things about equation and figure names that are worth pointing out. First, TEX does not allow you to use *numbers* as part of a name. Thus names like `\Eq1` and `\Eq2` are not allowed. However, you can *reuse* names as often as you wish. You can refer to an equation as `\A` in one section of the paper and later on redefine `\A` to refer to another equation. I find it convenient to use rather long descriptive names like `\FirstOrderCondition` for equations that I refer to throughout the paper and use short names like `\A` for equations that I only refer to once or twice.

There a couple of handy math commands. You can type `\text{for all}` if you want "for all" to appear in math mode. You can type `\D{f(x)}{x_i}` to get

$$\frac{\partial f(x)}{\partial x_i}$$

and `d{f(x)}{x_i}` to get $\partial f(x)/\partial x_i$.

The command `\proof` sets a nice *Proof.* The command `\qed` gives you a box: ■

The command `\proclaim` works the same as described in *The TEXbook*, but the style has been changed slightly.

The command `\today` gives today's date nicely spelled out, like: December 17, 2005.

To get verbatim TEX listings, use the construction

$$\verbatim\#This\ will\ appear\ verbatim\#$$

Any convenient symbols can be used as a delimiter in place of the `#` signs.

3. References

VerTEX has nice way to deal with references. You type something like the following:

```
\ref \by{Afriat, S.} \paper{The Construction of a Utility Function from
Expenditure Data} \jour{International Economic Review} \vol{8}
\yr{1967} \pages{67--77}\endref

\ref \by{Afriat, S.} \paper{On the Constructability of Consistent Price
Indices Between Several Periods Simultaneously} \inbook{Essays in
the Theory and Measurement of Consumer Behavior in Honor of Sir
Richard Stone}\editor{A. Deaton} \publ{Cambridge University Press}
\publaddr{Cambridge, England}\yr{1984}\endref

\ref \by{Browning, M.}\paper{A Non-Parametric Test of the Life-Cycle
Rational Expectations Hypothesis} \paperinfo{Princeton University
Discussion Paper 64} \yr{1984}\endref

\ref \by{Varian, H.} \paper{Nonparametric Test of Models of Consumer
Behavior}\jour{Review of Economic Studies} \vol{50} \yr{1982b} \no{3}
\pages{99--110}\endref

\ref \by{Varian, H.} \book{Microeconomic Analysis} \publ{W.
W. Norton \& Co.} \publaddr{New York} \yr{1984}\endref
```

and you will get a nice typeset output like:

Afriat, S. (1967) "The Construction of a Utility Function from Expenditure Data," *International Economic Review*, **8**, 67–77.

Afriat, S. (1984) "On the Constructability of Consistent Price Indices Between Several Periods Simultaneously," in *Essays in the Theory and Measurement of Consumer Behavior in Honor of Sir Richard Stone*, ed. A. Deaton. Cambridge, England: Cambridge University Press.

Browning, M. (1984) "A Non-Parametric Test of the Life-Cycle Rational Expectations Hypothesis," Princeton University Discussion Paper 64.

Varian, H. (1982b) "Nonparametric Test of Models of Consumer Behavior," *Review of Economic Studies*, **50**, 3, 99–110.

Varian, H. (1984) *Microeconomic Analysis*. New York: W. W. Norton & Co..

The reference macros are quite complicated and are still being fixed; use them at your own risk. Currently if you omit a field that is require—like leaving out the page numbers or something like that—VerTeX will sometimes print out excess commas and other punctuation. Eventually this will be fixed, but for now it is better to put in a dummy value, like `\pages{???}` or something like that.

If you have a fancy reference that doesn't fit one of the above models, just use the `\ref` macro to start the reference. You'll get the right hanging indentation and inter-reference spacing that way.

Refer to the file `vertex.hst` for the history of revisions to VerTeX. If you add some peachy macros of your own, I strongly suggest that you put them in a separate file. Then as new revisions of VerTeX come out, you won't have to modify them in any way.

VerTeX is in the public domain; please feel free to distribute it however you want, as long as you indicate the original author.

4. Journals

Want to get published quick? Then use VerTeX's journal simulation feature. Instead of using the command `input ppt.sty` use the style files:

`jpe.sty` — for the *Journal of Polemical Economy*.
`jep.sty` — for the *Journal of Economic Perspectives*.
`jet.sty` — for the *Journal of Economic Theorems*.
`aer.sty` — for the *Armenian Economic Review*.
`ecnmet.sty` — for *Economagica*.
`restud.sty` — for *Review for Economic Students*.
`qje.sty` — for the *Quartered Journal of Economics*.

When you use one of these styles, VerTeX will automatically adjust the style of the document and the style of the references to be more-or-less consistent with the journal style. Some fine tuning may be needed, but the output generally looks pretty good.

If you want to see a small sample of each output, TeX the file `vertest.tex`.