

# Simple markdown exercise\*

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28 junho, 2021

## Abstract

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**Keywords:** Development Economics, Panel Data

**JEL Codes:** J64, H31

## 1 Introduction

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You can type in **bold** or *italic*

You can put an **entire sentence in bold** or *italic*

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\*We would also like to thank seminar and conference participants at the NIPE Research Seminars, the II Conferência do Conselho para a Produtividade and the Annual Conference of the Global Forum on Productivity. This paper is financed by National Funds of the FCT - Portuguese Foundation for Science and Technology, projects UIDB/03182/2020 and PTDC/EGE-ECO/29822/2017 (“It’s All About Productivity: contributions to the understanding of the sluggish performance of the Portuguese economy”).

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Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Odio eu feugiat pretium nibh. **Quis varius quam quisque id diam vel. Arcu odio ut sem nulla pharetra.** Sem et tortor consequat id porta nibh venenatis cras sed. Eu non diam phasellus vestibulum lorem sed risus. Non quam lacus suspendisse faucibus interdum posuere. Aliquet enim tortor at auctor urna. Amet facilisis magna etiam tempor orci eu lobortis. *Maecenas ultricies mi eget mauris pharetra et. Pharetra et ultrices neque ornare aenean euismod elementum nisi. Aenean vel elit scelerisque mauris pellentesque pulvinar pellentesque.* Fermentum dui faucibus in ornare quam. Auctor elit sed vulputate mi sit.

If you want to type a **Header** see Section [2](#).

## 2 Literature review

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Penatibus et magnis dis parturient montes nascetur ridiculus mus. Cursus eget nunc scelerisque viverra mauris in aliquam. Viverra tellus in hac habitasse. Mattis vulputate enim nulla aliquet. Non pulvinar neque laoreet suspendisse interdum consectetur libero id faucibus. Pharetra massa massa ultricies mi quis hendrerit dolor magna eget. In pellentesque massa placerat dui ultricies lacus. Malesuada fames ac turpis egestas integer eget aliquet nibh. Vitae suscipit tellus mauris a diam.

### 2.1 Insert a sub-section

#### 2.1.1 Sub sub-section

## 3 Insert

### 3.1 Your first *link*

This is the [text you will see](#)

or **using bold**

You can also use reference links to move to [my website](#) or to [Universidade do Minho](#)

## 4 How to use images and define size

### 4.1 First using a relative size



or a **fixed size**



Figure 1: Universidade do Minho

You can also use an image from a link:

When writing your document you can quote using carat ( $>$ ). This is called a block quote. The following text was generated using [Lorem Ipsum](#).

Tuas vocat velantibus rogos, quem tamen foedere **laetabere bipennifer** nulla se **camini**. In **forsitan**, in **verti iam** submissaeque faciam adversum et quae. Tu ille postquam interdum, est sed Britannos, dedecus solae pectore at modo in adeste vitta tantummodo ingrato. Caedis numina, tonitruque iugum speciem corpore, leves hunc Zancle auferat umero foribusque cursus negate inhaerentem Styga Hebre meosque?

Spes speciosoque dixit ferinae agros simulatque domum alimentaue pabula claro; a costis, a nec captus Aquilone. Pharonque donec, modo suo vires arcanis, quem illis Vesta quae dedit. Pervenerat placat lenta; sine finxit, tantum pater, tamen fila sedibus, sonent. Nempe caedit quas fundunt optima sua vultusque remolliat et habet tendebat Hesperidas: corniger. *Digna* spatium effugere magne, a pectora hospes volant frena crinis resonant protinus; morte Hippomenen.

Another markdown element you may want to use are **lists**.

## 5 Course Outline

as an *ordered list*

1. Markdown and Pandoc
2. Create a markdown document and run code
3. Develop a report

#### 4. Publish the report

or just as bullets

- Markdown and Pandoc
- Create a markdown document and run code

where you may need additional depth. Use tabulations

- Markdown and Pandoc
  - Create a markdown document and run code
- Develop a report
  - Publish the report

A more complex example is discussed in Section 6.

## 6 LITERATE PROGRAMMING IN R MARKDOWN

- Date: 27 & 29 October | 17h00-20h00
- Delivered by: Miguel Portela, University of Minho

Literate programming refers to melding a descriptive narrative and computer code into a single document, from which both human-friendly documentation and computer readable files can be created. Your work should be transparent, easy to update, easy to maintain, and easy to replicate. Literate programming saves time and effort, so we can dedicate more time doing research. Literate programming is also useful for teaching.

### Course Outline

1. Markdown and Pandoc
2. Create a markdown document and run code
3. Develop a report
4. Publish the report

### References

- Xie, Y., Allaire, J.J. and Golemund, G., 2018. R markdown: The definitive guide. CRC Press. (<https://bookdown.org/yihui/rmarkdown/>), “*Course 5: Web-based tools for data analysis: JupyterLab environment and workflow optimization*”
- The Jupyter Notebook: <https://jupyter-notebook.readthedocs.io/>
- [Project Jupyter](#)

## 7 Paragraphs & Tables

### 7.1 Using a double space at the end of the sentence

Phaethon Delphos mea gravis excipiunt stabat: quem aqua taceam Phoebos, vir aratri, Ulixes haec perque.

Nactus dempserat sui regnat enim, acta stet Areos praesagaque in iacent? Fuerant crescentem vinci clamat.<sup>1</sup>

### 7.2 Add footnotes

This is a footnote.

### 7.3 This is a table

Table 1: Sample table

| Tables   | Are           | Cool   |
|----------|---------------|--------|
| Var 1 is | Left-Aligned  | \$1271 |
| Var 2 is | Centered      | \$13   |
| Var 3 is | Right-Aligned | \$7    |

## 8 The YAML concept

You can add information to your document, like title, author, etc., using [YAML](#).

YAML: YAML Ain't Markup Language

What It Is: YAML is a human friendly data serialization standard for all programming languages.

The following lines are comments so *pandoc* will not compile them. You can use standard HTML tags to comments out sections of your code. To see their purpose add them to the beginning of the text.

### 8.1 Citations

Lorem markdownum medulla: Est hanc instrumenta sibi; premit opem Dianae, *ubi India* vocesque prodamne, quamvis? Et esse. Quod molire auxiliumque caelumque tertia hospes, fecerat sermonibus prensamque mortale summa, iubeatis coercet iugulum, **et**. For a discussion see [MacFarlane \(2020\)](#) ... (further insight is provided in [Solow 1952, 31–32](#)).

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<sup>1</sup>Ad remorum vestem pater victor Megareus lacrimas adsiduae regina sequenti Invidiae, ille tum aliquid. Locus uno quid curruque dixit, me regis, deum **iamque**, et ripas validum ubi! Auras amores quam feritatis apros demite ademptas est **tanto**!

## 9 Equations

You can write inline equations as  $y_i = \alpha_0 + \tau x_i + \psi_i$  or numbered equations,

$$y_{it} = \beta_0 + \beta_1 x_{it} + \eta_i + \varepsilon_{it} \quad (1)$$

## 10 Pandoc's manual

For additional insights see [MacFarlane \(2020\)](#).

## 11 Build your report

The average log wage in our data is 1.675, while the sum is 36.

Table 2: Summary table with stargazer

| Statistic | N      | Mean      | St. Dev.  | Min    | Pctl(25) | Pctl(75) | Max     |
|-----------|--------|-----------|-----------|--------|----------|----------|---------|
| idcode    | 28,534 | 2,601.284 | 1,487.359 | 1      | 1,327    | 3,881    | 5,159   |
| year      | 28,534 | 77.959    | 6.384     | 68     | 72       | 83       | 88      |
| birth_yr  | 28,534 | 48.085    | 3.013     | 41     | 46       | 51       | 54      |
| age       | 28,510 | 29.045    | 6.701     | 14.000 | 23.000   | 34.000   | 46.000  |
| race      | 28,534 | 1.303     | 0.482     | 1      | 1        | 2        | 3       |
| msp       | 28,518 | 0.603     | 0.489     | 0.000  | 0.000    | 1.000    | 1.000   |
| nev_mar   | 28,518 | 0.230     | 0.421     | 0.000  | 0.000    | 0.000    | 1.000   |
| grade     | 28,532 | 12.533    | 2.324     | 0.000  | 12.000   | 14.000   | 18.000  |
| collgrad  | 28,534 | 0.168     | 0.374     | 0      | 0        | 0        | 1       |
| not_smsa  | 28,526 | 0.282     | 0.450     | 0.000  | 0.000    | 1.000    | 1.000   |
| c_city    | 28,526 | 0.357     | 0.479     | 0.000  | 0.000    | 1.000    | 1.000   |
| south     | 28,526 | 0.410     | 0.492     | 0.000  | 0.000    | 1.000    | 1.000   |
| ind_code  | 28,193 | 7.693     | 2.994     | 1.000  | 5.000    | 11.000   | 12.000  |
| occ_code  | 28,413 | 4.778     | 3.065     | 1.000  | 3.000    | 6.000    | 13.000  |
| union     | 19,238 | 0.234     | 0.424     | 0.000  | 0.000    | 0.000    | 1.000   |
| wks_ue    | 22,830 | 2.548     | 7.294     | 0.000  | 0.000    | 0.000    | 76.000  |
| ttl_exp   | 28,534 | 6.215     | 4.652     | 0.000  | 2.462    | 9.128    | 28.885  |
| tenure    | 28,101 | 3.124     | 3.751     | 0.000  | 0.500    | 4.167    | 25.917  |
| hours     | 28,467 | 36.560    | 9.870     | 1.000  | 35.000   | 40.000   | 168.000 |
| wks_work  | 27,831 | 53.989    | 29.032    | 0.000  | 36.000   | 72.000   | 104.000 |
| ln_wage   | 28,534 | 1.675     | 0.478     | 0.000  | 1.361    | 1.964    | 5.264   |

Table 2 shows full data's summary statistics.<sup>2</sup> `stargazer()` is an excellent solution to export outputs.

See Figure 2.

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<sup>2</sup>You can also produce statistics for a sub set of variables; see Table 3.

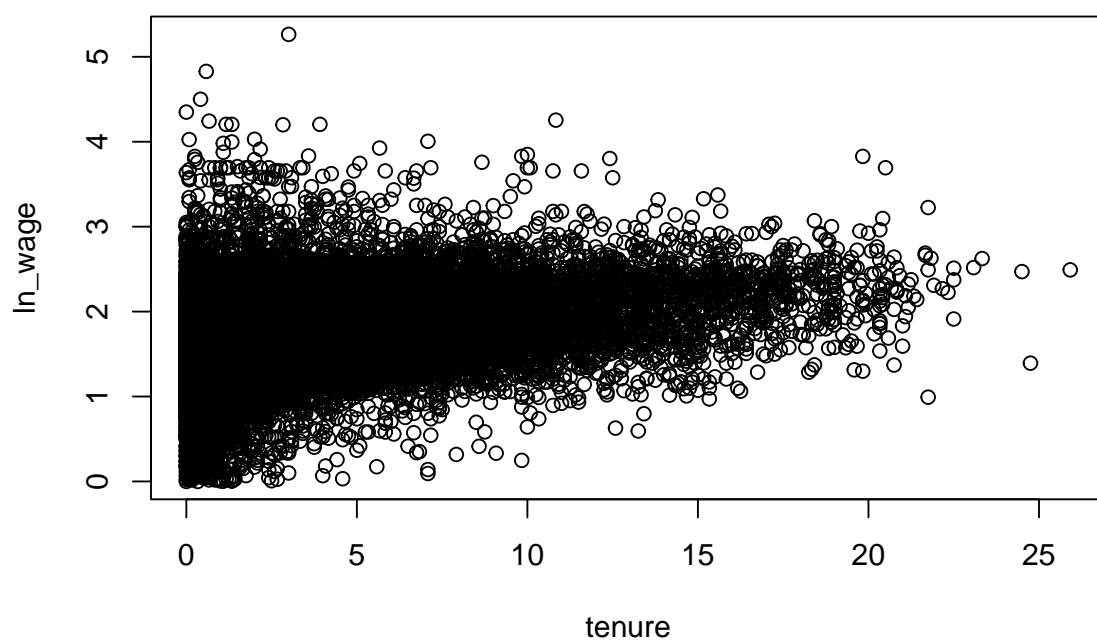


Figure 2: Log wages vs. tenure

Table 3: Short statistics

| Statistic | N      | Mean  | St. Dev. | Min   | Pctl(25) | Pctl(75) | Max    |
|-----------|--------|-------|----------|-------|----------|----------|--------|
| tenure    | 28,101 | 3.124 | 3.751    | 0.000 | 0.500    | 4.167    | 25.917 |
| ln_wage   | 28,534 | 1.675 | 0.478    | 0.000 | 1.361    | 1.964    | 5.264  |

An alternative could be to export the figure and include it as an image.

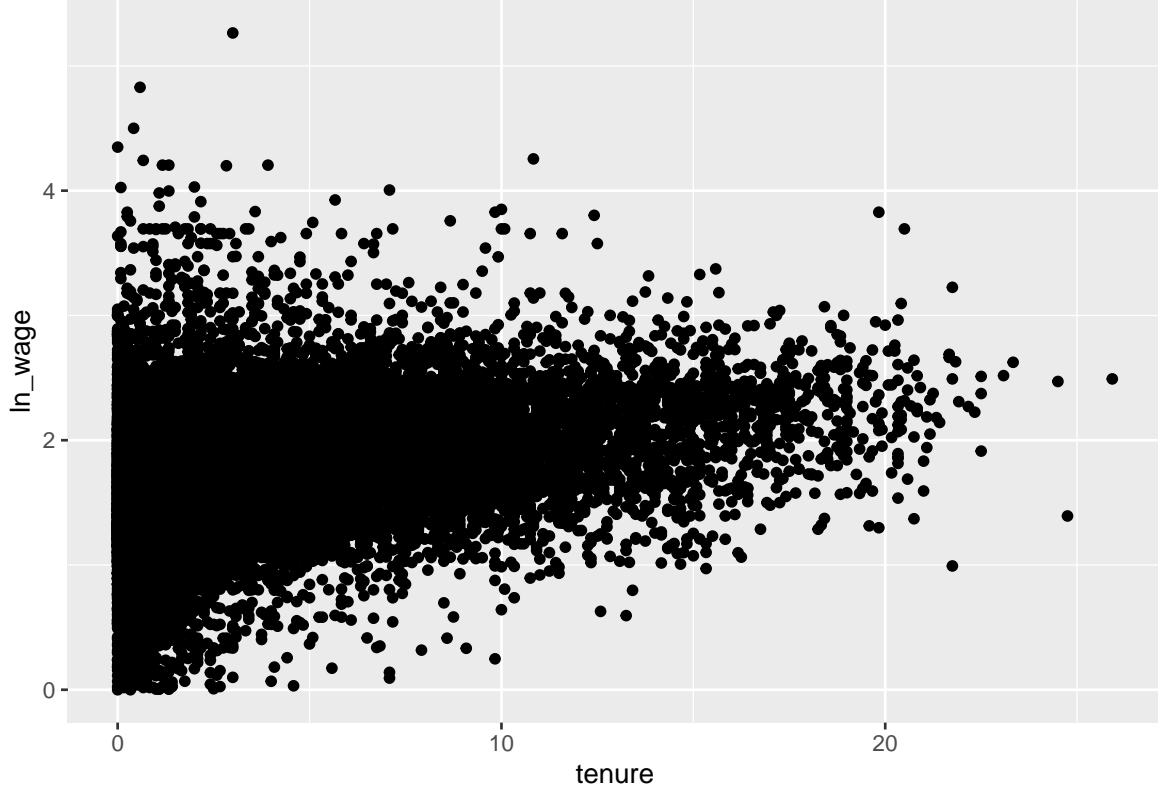


Figure 3: Alternative solution

## Saving 6.5 x 4.5 in image

See Figure 3. We could also include the figure in the following way

We could as well include regression analysis. See Table 4 for an example.

The estimated return to tenure is 16.8%. The  $R^2$  is 0.14. However, when using only the sample of 1988 the return is 0.1, while the quality of the adjustment 0.1.

We can write the estimated equation

$$\hat{y}_i = 1.6 + 0.04 \times tenure_i + 0.17 \times union_i$$



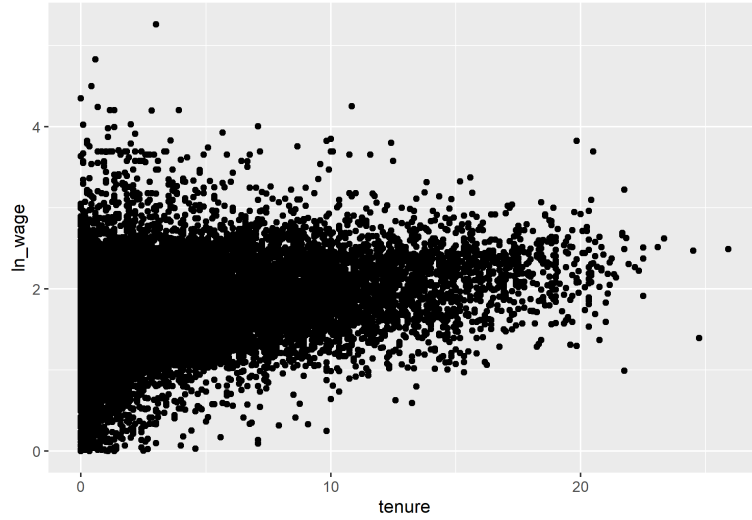


Figure 4: Wages vs. tenure

Table 4: Regression analysis

|        | Model 1                 | Model 2                 | Model 3                 |
|--------|-------------------------|-------------------------|-------------------------|
| TENURE | 0.04720***<br>(0.00071) | 0.03623***<br>(0.00077) | 0.03422***<br>(0.00293) |
| UNION  |                         | 0.16815***<br>(0.00750) | 0.10775***<br>(0.02261) |
| $N$    | 28,101                  | 19,010                  | 1,660                   |
| $R^2$  | 0.13733                 | 0.14134                 | 0.09700                 |

Notes: Standard errors in parentheses.

## 12 Final remarks

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Elit sed vulputate mi sit. Cursum turpis massa tincidunt dui ut ornare lectus sit. Non curabitur gravida arcu ac tortor dignissim convallis aenean – see [Portugal \(2019\)](#). Volutpat consequat mauris nunc congue nisi vitae suscipit. Placerat orci nulla pellentesque dignissim enim sit amet venenatis urna. Accumsan sit amet nulla facilisi morbi tempus iaculis urna. Aliquam malesuada bibendum arcu vitae elementum curabitur vitae nunc. Blandit cursus risus at ultrices mi tempus imperdiet. Pretium aenean pharetra magna ac placerat vestibulum lectus mauris.

## References

- MacFarlane, John. 2020. “Pandoc User’s Guide.” *Link: <https://Pandoc.org/MANUAL.pdf>*.
- Portugal, Banco de. 2019. *Portuguese Economic Growth: A View on Structural Features, Blockages and Reforms*. Lisbon: Banco de Portugal.

Solow, Robert. 1952. “On the Structure of Linear Models.” *Econometrica* 20 (1): 29–46.

## Appendix: Chunk options

The following info is taken from [here](#). See the full list at [here](#).

- `eval = FALSE` prevents code from being evaluated;
- `include = FALSE` runs the code, but doesn't show the code or results in the final document;
- `echo = FALSE` prevents code, but not the results from appearing in the finished file;
- `message = FALSE` or `warning = FALSE` prevents messages or warnings from appearing in the finished file;
- `results = 'hide'` hides printed output; `fig.show = 'hide'` hides plots;
- `error = TRUE` causes the render to continue even if code returns an error.