R Wide Data to Long Data Example (TIDYR Pivot Longer)

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Wide to Long

Go to the **RMD**, **R**, **PDF**, or **HTML** version of this file. Go back to fan's REconTools Package, R Code Examples Repository (bookdown site), or Intro Stats with R Repository (bookdown site).

Using the pivot_wider function in tidyr to reshape panel or other data structures

Generated Matrix by States to Long Table A matrix of ev given states, rows are states and cols are shocks. Convert to Long table with shock and state values and ev.

Generated Matrix by States to Long Table where state values are stored as variables, with correct value labels for states:

1. Generate a matrix
2. Convert matrix to tibble
3. Tibble make longer, and store column and row id var names

```
# Generate A Matrix
set.seed(123)
ar_a <- c(1.2, 22.2, 33.33)
ar_z <- c(-2.5,  -1, 0, 1, 2.53)
mt_ev = matrix(rnorm(ar_a*ar_z), nrow=length(ar_a), ncol=length(ar_z))

# Name Matrix
rownames(mt_ev) <- paste0('ai', seq(1:length(ar_a)))
colnames(mt_ev) <- paste0('zi', seq(1:length(ar_z)))

# to tibble
tb_ev <- as_tibble(mt_ev) %>% rowid_to_column(var = "ai")

# longer
tb_ev_long <- tb_ev %>%
  pivot_longer(cols = starts_with('zi'),
               names_to = c('zi'),
               names_pattern = paste0("zi(.)"),
               values_to = "ev") %>%
  mutate(zi = as.numeric(zi))

# Merge with a and z values
tb_ev_long <- tb_ev_long %>%
```

```
  left_join(as_tibble(ar_a) %>%
              rowid_to_column(var = "ai") %>%
              rename(a = value)
              , by = 'ai') %>%
  left_join(as_tibble(ar_z) %>%
              rowid_to_column(var = "zi") %>%
              rename(z = value),
            by = 'zi') %>%
  select(a,ai,z,zi,ev)

# Display
kable(tb_ev) %>% kable_styling_fc()
```

ai	zi1	zi2	zi3	zi4	zi5
1	-0.5604756	0.0705084	-0.2301775	0.1292877	1.5587083
2	-0.2301775	0.1292877	1.5587083	-0.5604756	0.0705084
3	1.5587083	-0.5604756	0.0705084	-0.2301775	0.1292877

```
kable(tb_ev_long) %>% kable_styling_fc()
```

a	ai	z	zi	ev
1.20	1	-2.50	1	-0.5604756
1.20	1	-1.00	2	0.0705084
1.20	1	0.00	3	-0.2301775
1.20	1	1.00	4	0.1292877
1.20	1	2.53	5	1.5587083
22.20	2	-2.50	1	-0.2301775
22.20	2	-1.00	2	0.1292877
22.20	2	0.00	3	1.5587083
22.20	2	1.00	4	-0.5604756
22.20	2	2.53	5	0.0705084
33.33	3	-2.50	1	1.5587083
33.33	3	-1.00	2	-0.5604756
33.33	3	0.00	3	0.0705084
33.33	3	1.00	4	-0.2301775
33.33	3	2.53	5	0.1292877