

Analyzing the data

REPORTING WITH R MARKDOWN



Amy Peterson

Curriculum Manager at DataCamp

Loading packages

```
1 ---
2 title: "Investment Report"
3 date: "`r format(Sys.time(), '%d %B %Y')`"
4 output: html_document
5 ---
6
7 ```{r data, include = FALSE}
8 library(readr)
9
10 investment_annual_summary <- read_csv("https://assets.datacamp.com/production/
repositories/5756/datasets/d0251f26117bbcf0ea96ac276555b9003f4f7372/
investment\_annual\_summary.csv")
11 investment_services_projects <- read_csv("https://assets.datacamp.com/production/
repositories/5756/datasets/bcb2e39ecbe521f4b414a21e35f7b8b5c50aec64/
investment\_services\_projects.csv")
12 ```
13
```

Loading packages

```
1  ---
2  title: "Investment Report"
3  date: "`r format(Sys.time(), '%d %B %Y')`"
4  output: html_document
5  ---
6
7  ```{r data, include = FALSE}
8  library(readr)
9  library(dplyr)
10
11  investment_annual_summary <- read_csv("https://assets.datacamp.com/production/
repositories/5756/datasets/d0251f26117bbcf0ea96ac276555b9003f4f7372/
investment\_annual\_summary.csv")
12  investment_services_projects <- read_csv("https://assets.datacamp.com/production/
repositories/5756/datasets/bcb2e39ecbe521f4b414a21e35f7b8b5c50aec64/
investment\_services\_projects.csv")
13  ```
```

Filtering for projects in Indonesia

```
29 ```{r}
30 indonesia_investment_projects <- investment_services_projects %>%
31   filter(country == "Indonesia")
32
33 indonesia_investment_projects
34 ```
```

```
indonesia_investment_projects <- investment_services_projects %>%
  filter(country == "Indonesia")
```

```
indonesia_investment_projects
```

```
## # A tibble: 38 x 13
##   date_disclosed      country ifc_country_code sector project_name
##   <dtm>              <chr>    <chr>          <chr> <chr>
## 1 2018-04-27 00:00:00 Indone~ INS          other SSIA Ind Est
## 2 2018-04-25 00:00:00 Indone~ INS          Infra~ PT Bajraday~
## 3 2018-01-10 00:00:00 Indone~ INS          Agrib~ Nabati Indo~
## 4 2017-11-14 00:00:00 Indone~ INS          Finan~ MBK Loan 20~
## 5 2017-07-05 00:00:00 Indone~ INS          Finan~ IIF USD Loan
## 6 2017-04-12 00:00:00 Indone~ INS          Finan~ Indosurya F~
## 7 2017-02-21 00:00:00 Indone~ INS          Healt~ Quantum
## 8 2016-12-22 00:00:00 Indone~ INS          Finan~ BTPN MSME L~
## 9 2016-12-13 00:00:00 Indone~ INS          Finan~ Radana Fina~
## 10 2016-09-20 00:00:00 Indone~ INS          Manuf~ PT Aneka Ga~
## # ... with 28 more rows, and 8 more variables: project_number <dbl>,
## #   company_name <chr>, status <chr>, risk_management_investment <dbl>,
## #   guarantee_investment <dbl>, loan_investment <dbl>, equity_investment <dbl>,
## #   total_investment <dbl>
```

Filtering for projects in Indonesia in 2012

```
29 ```{r}
30 indonesia_investment_projects_2012 <- investment_services_projects %>%
31   filter(country == "Indonesia",
32          date_disclosed >= "2011-07-01",
33          date_disclosed <= "2012-06-30")
34
35 indonesia_investment_projects_2012
36 ```
```

```
indonesia_investment_projects_2012 <- investment_services_projects %>%
  filter(country == "Indonesia",
         date_disclosed >= "2011-07-01",
         date_disclosed <= "2012-06-30")

indonesia_investment_projects_2012
```

```
## # A tibble: 6 x 13
##   date_disclosed      country ifc_country_code sector project_name
##   <dtm>              <chr>    <chr>          <chr>  <chr>
## 1 2012-04-27 00:00:00 Indone~ INS          Agrib~ FHP Indones~
## 2 2012-04-03 00:00:00 Indone~ INS          Finan~ LMS Toll Pr~
## 3 2012-02-27 00:00:00 Indone~ INS          Finan~ CIMB Niaga ~
## 4 2011-12-16 00:00:00 Indone~ INS          Oil, ~ BTPN Loan II
## 5 2011-11-17 00:00:00 Indone~ INS          Infra~ Medco Power~
## 6 2011-10-03 00:00:00 Indone~ INS          Finan~ Wintermar G~
## # ... with 8 more variables: project_number <dbl>, company_name <chr>,
## #   status <chr>, risk_management_investment <dbl>, guarantee_investment <dbl>,
## #   loan_investment <dbl>, equity_investment <dbl>, total_investment <dbl>
```

Including code results in text

```
29   ```{r}
30   indonesia_investment_projects_2012 <- investment_services_projects %>%
31     filter(country == "Indonesia",
32            date_disclosed >= "2011-07-01",
33            date_disclosed <= "2012-06-30")
34
35   indonesia_investment_projects_2012_total <- indonesia_investment_projects_2012 %>%
36     summarize(sum_total_investment = sum(total_investment, na.rm = TRUE))
37   ```
```

Including code results in text

```
29 ```{r}
30 indonesia_investment_projects_2012 <- investment_services_projects %>%
31   filter(country == "Indonesia",
32          date_disclosed >= "2011-07-01",
33          date_disclosed <= "2012-06-30")
34
35 indonesia_investment_projects_2012_total <- indonesia_investment_projects_2012 %>%
36   summarize(sum_total_investment = sum(total_investment, na.rm = TRUE))
37 ```
38
39 The total investment amount of all projects in Indonesia in the 2012 fiscal year
40 was `r indonesia_investment_projects_2012_total` million dollars.
```

```
indonesia_investment_projects_2012 <- investment_services_projects %>%
  filter(country == "Indonesia",
         date_disclosed >= "2011-07-01",
         date_disclosed <= "2012-06-30")

indonesia_investment_projects_2012_total <- indonesia_investment_projects_
_2012 %>%
  summarize(sum_total_investment = sum(total_investment, na.rm = TRUE))
```

The total investment amount for all projects in Indonesia in the 2012 fiscal year was 435 million dollars.

Multiple code chunks

```

25   ### Investment Projects in Indonesia
26
27   The `investment_services_projects` dataset provides information about each investment
    project from 2012 to 2018. Information listed includes the project name, company name,
    sector, project status, and investment amounts.
28
29   ```{r}
30   indonesia_investment_projects_2012 <- investment_services_projects %>%
31     filter(country == "Indonesia",
32            |
33            |
34            |
35            |
36            |
37            |
38            |
39            |
40            |
41            |
42            |
43            |
44            |
45            |
46            |
47            |
48            |
49            |
50            |
51            |
52            |
53            |
54            |
55            |
56            |
57            |
58            |
59            |
60            |
61            |
62            |
63            |
64            |
65            |
66            |
67            |
68            |
69            |
70            |
71            |
72            |
73            |
74            |
75            |
76            |
77            |
78            |
79            |
80            |
81            |
82            |
83            |
84            |
85            |
86            |
87            |
88            |
89            |
90            |
91            |
92            |
93            |
94            |
95            |
96            |
97            |
98            |
99            |
100           |
101           |
102           |
103           |
104           |
105           |
106           |
107           |
108           |
109           |
110           |
111           |
112           |
113           |
114           |
115           |
116           |
117           |
118           |
119           |
120           |
121           |
122           |
123           |
124           |
125           |
126           |
127           |
128           |
129           |
130           |
131           |
132           |
133           |
134           |
135           |
136           |
137           |
138           |
139           |
140           |
141           |
142           |
143           |
144           |
145           |
146           |
147           |
148           |
149           |
150           |
151           |
152           |
153           |
154           |
155           |
156           |
157           |
158           |
159           |
160           |
161           |
162           |
163           |
164           |
165           |
166           |
167           |
168           |
169           |
170           |
171           |
172           |
173           |
174           |
175           |
176           |
177           |
178           |
179           |
180           |
181           |
182           |
183           |
184           |
185           |
186           |
187           |
188           |
189           |
190           |
191           |
192           |
193           |
194           |
195           |
196           |
197           |
198           |
199           |
200           |
201           |
202           |
203           |
204           |
205           |
206           |
207           |
208           |
209           |
210           |
211           |
212           |
213           |
214           |
215           |
216           |
217           |
218           |
219           |
220           |
221           |
222           |
223           |
224           |
225           |
226           |
227           |
228           |
229           |
230           |
231           |
232           |
233           |
234           |
235           |
236           |
237           |
238           |
239           |
240           |
241           |
242           |
243           |
244           |
245           |
246           |
247           |
248           |
249           |
250           |
251           |
252           |
253           |
254           |
255           |
256           |
257           |
258           |
259           |
260           |
261           |
262           |
263           |
264           |
265           |
266           |
267           |
268           |
269           |
270           |
271           |
272           |
273           |
274           |
275           |
276           |
277           |
278           |
279           |
280           |
281           |
282           |
283           |
284           |
285           |
286           |
287           |
288           |
289           |
290           |
291           |
292           |
293           |
294           |
295           |
296           |
297           |
298           |
299           |
300           |
301           |
302           |
303           |
304           |
305           |
306           |
307           |
308           |
309           |
310           |
311           |
312           |
313           |
314           |
315           |
316           |
317           |
318           |
319           |
320           |
321           |
322           |
323           |
324           |
325           |
326           |
327           |
328           |
329           |
330           |
331           |
332           |
333           |
334           |
335           |
336           |
337           |
338           |
339           |
340           |
341           |
342           |
343           |
344           |
345           |
346           |
347           |
348           |
349           |
350           |
351           |
352           |
353           |
354           |
355           |
356           |
357           |
358           |
359           |
360           |
361           |
362           |
363           |
364           |
365           |
366           |
367           |
368           |
369           |
370           |
371           |
372           |
373           |
374           |
375           |
376           |
377           |
378           |
379           |
380           |
381           |
382           |
383           |
384           |
385           |
386           |
387           |
388           |
389           |
390           |
391           |
392           |
393           |
394           |
395           |
396           |
397           |
398           |
399           |
400           |
401           |
402           |
403           |
404           |
405           |
406           |
407           |
408           |
409           |
410           |
411           |
412           |
413           |
414           |
415           |
416           |
417           |
418           |
419           |
420           |
421           |
422           |
423           |
424           |
425           |
426           |
427           |
428           |
429           |
430           |
431           |
432           |
433           |
434           |
435           |
436           |
437           |
438           |
439           |
440           |
441           |
442           |
443           |
444           |
445           |
446           |
447           |
448           |
449           |
450           |
451           |
452           |
453           |
454           |
455           |
456           |
457           |
458           |
459           |
460           |
461           |
462           |
463           |
464           |
465           |
466           |
467           |
468           |
469           |
470           |
471           |
472           |
473           |
474           |
475           |
476           |
477           |
478           |
479           |
480           |
481           |
482           |
483           |
484           |
485           |
486           |
487           |
488           |
489           |
490           |
491           |
492           |
493           |
494           |
495           |
496           |
497           |
498           |
499           |
500           |
501           |
502           |
503           |
504           |
505           |
506           |
507           |
508           |
509           |
510           |
511           |
512           |
513           |
514           |
515           |
516           |
517           |
518           |
519           |
520           |
521           |
522           |
523           |
524           |
525           |
526           |
527           |
528           |
529           |
530           |
531           |
532           |
533           |
534           |
535           |
536           |
537           |
538           |
539           |
540           |
541           |
542           |
543           |
544           |
545           |
546           |
547           |
548           |
549           |
550           |
551           |
552           |
553           |
554           |
555           |
556           |
557           |
558           |
559           |
560           |
561           |
562           |
563           |
564           |
565           |
566           |
567           |
568           |
569           |
570           |
571           |
572           |
573           |
574           |
575           |
576           |
577           |
578           |
579           |
580           |
581           |
582           |
583           |
584           |
585           |
586           |
587           |
588           |
589           |
590           |
591           |
592           |
593           |
594           |
595           |
596           |
597           |
598           |
599           |
600           |
601           |
602           |
603           |
604           |
605           |
606           |
607           |
608           |
609           |
610           |
611           |
612           |
613           |
614           |
615           |
616           |
617           |
618           |
619           |
620           |
621           |
622           |
623           |
624           |
625           |
626           |
627           |
628           |
629           |
630           |
631           |
632           |
633           |
634           |
635           |
636           |
637           |
638           |
639           |
640           |
641           |
642           |
643           |
644           |
645           |
646           |
647           |
648           |
649           |
650           |
651           |
652           |
653           |
654           |
655           |
656           |
657           |
658           |
659           |
660           |
661           |
662           |
663           |
664           |
665           |
666           |
667           |
668           |
669           |
670           |
671           |
672           |
673           |
674           |
675           |
676           |
677           |
678           |
679           |
680           |
681           |
682           |
683           |
684           |
685           |
686           |
687           |
688           |
689           |
690           |
691           |
692           |
693           |
694           |
695           |
696           |
697           |
698           |
699           |
700           |
701           |
702           |
703           |
704           |
705           |
706           |
70
```


Naming code chunks

```
25  ### Investment Projects in Indonesia
26
27  The `investment_services_projects` dataset provides information about each investment
    project from 2012 to 2018. Information listed includes the project name, company name,
    sector, project status, and investment amounts.
28
29  ```{r indonesia-investment-projects}
30  indonesia_investment_projects_2012 <- investment_services_projects %>%
31    filter(country == "Indonesia",
32           date_disclosed >= "2011-07-01",
33           date_disclosed <= "2012-06-30")
34
35  indonesia_investment_projects_2012
36  ```
37
38  ### Investment Projects in Indonesia in 2012
39  ```{r indonesia-investment-projects-2012}
40  indonesia_investment_projects_2012 <- investment_services_projects %>%
41    filter(country == "Indonesia",
42           date_disclosed >= "2011-07-01",
43           date_disclosed <= "2012-06-30")
```

Adding plots

REPORTING WITH R MARKDOWN



Amy Peterson

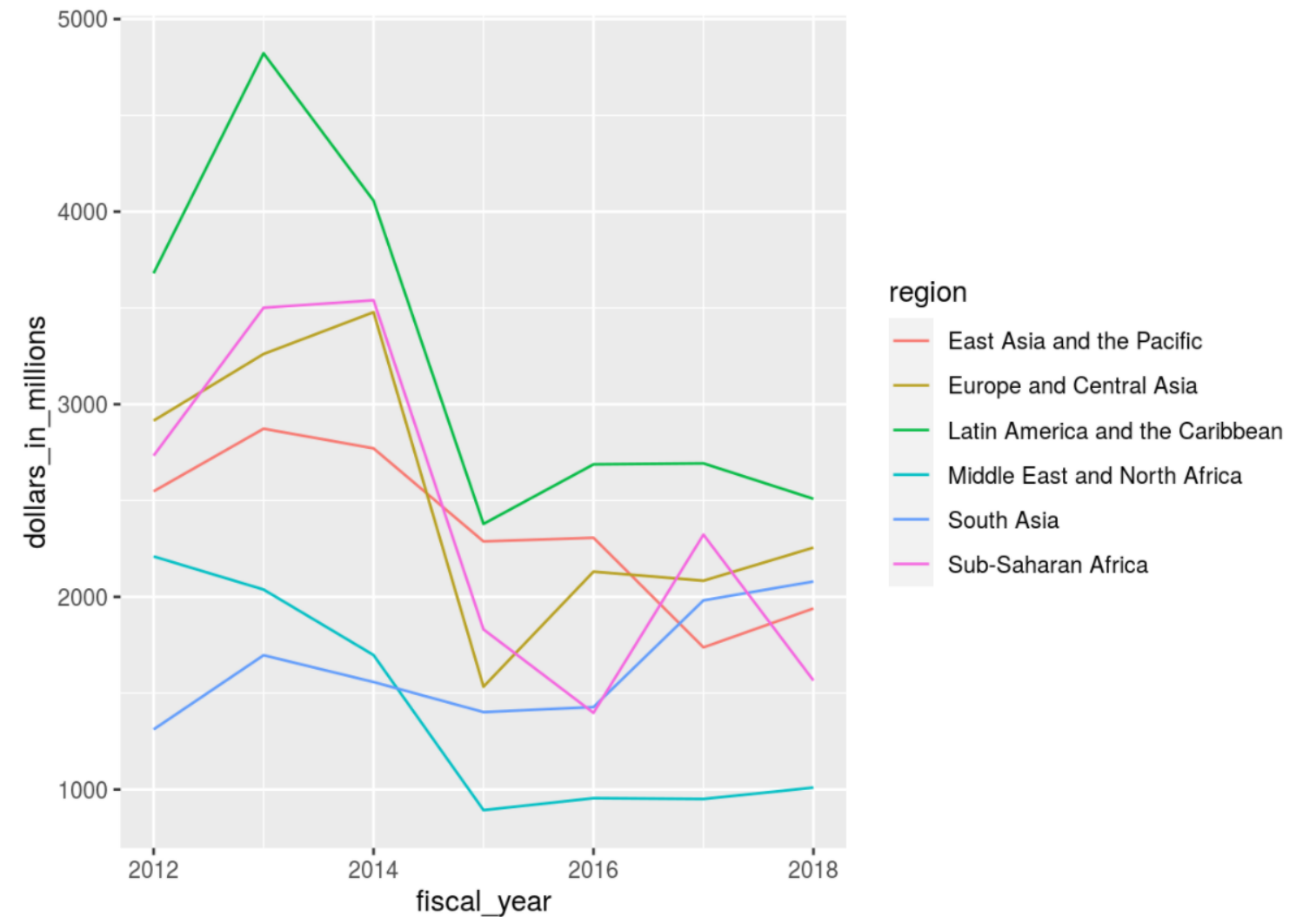
Curriculum Manager at DataCamp

Loading ggplot2

```
1  ---
2  title: "Investment Report"
3  date: "`r format(Sys.time(), '%d %B %Y')`"
4  output: html_document
5  ---
6
7  ```{r data, include = FALSE}
8  library(readr)
9  library(dplyr)
10 library(ggplot2)
11
12 investment_annual_summary <- read_csv("https://assets.datacamp.com/production/
repositories/5756/datasets/d0251f26117bbcf0ea96ac276555b9003f4f7372/
investment\_annual\_summary.csv")
13 investment_services_projects <- read_csv("https://assets.datacamp.com/production/
repositories/5756/datasets/bcb2e39ecbe521f4b414a21e35f7b8b5c50aec64/
investment\_services\_projects.csv")
14 ```
```

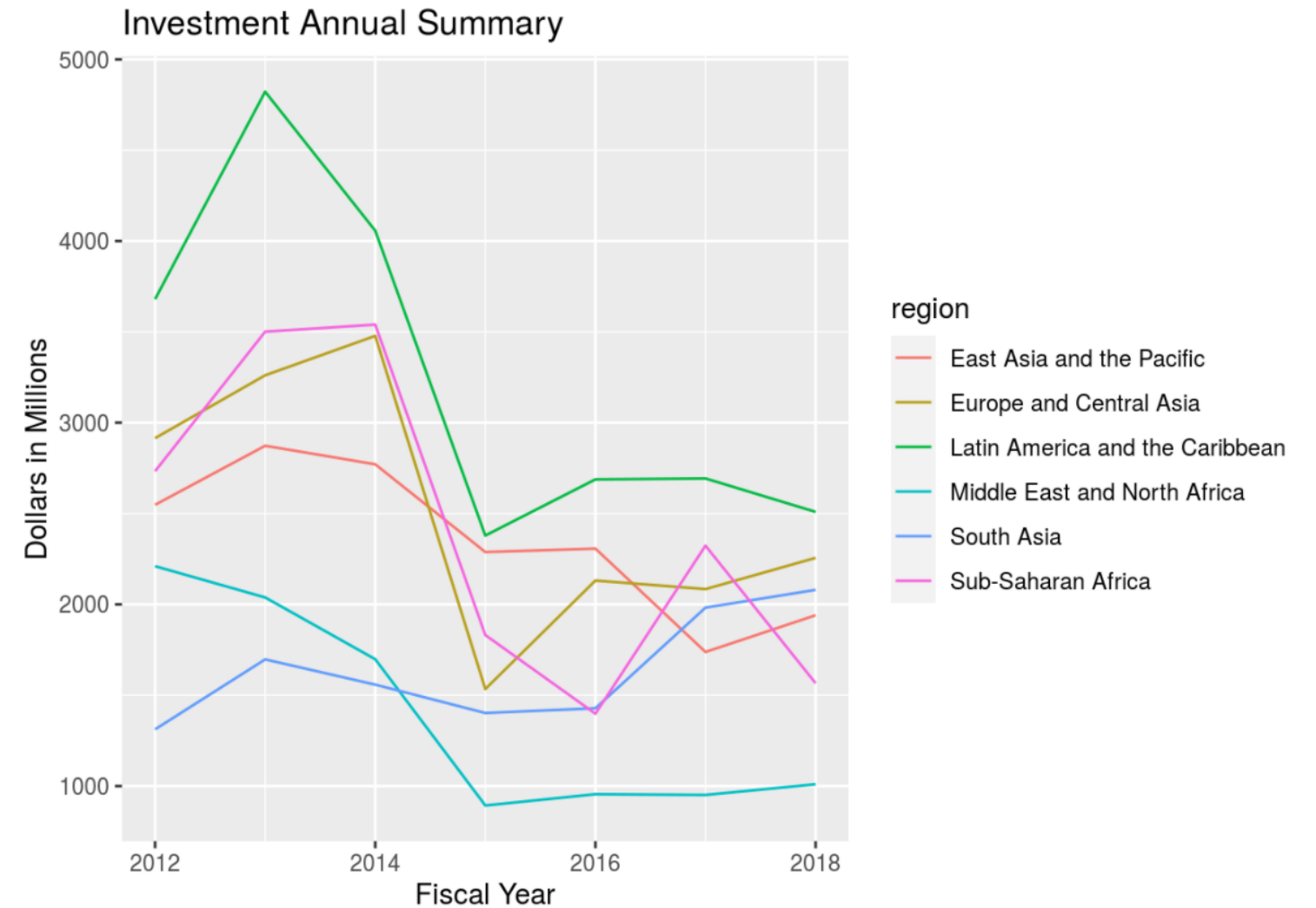
Visualizing the annual summary

```
21 ```{r investment-annual-summary}  
22 ggplot(investment_annual_summary, aes(x = fiscal_year, y = dollars_in_millions,  
23   color = region)) +  
24   geom_line()
```



Adding plot labels

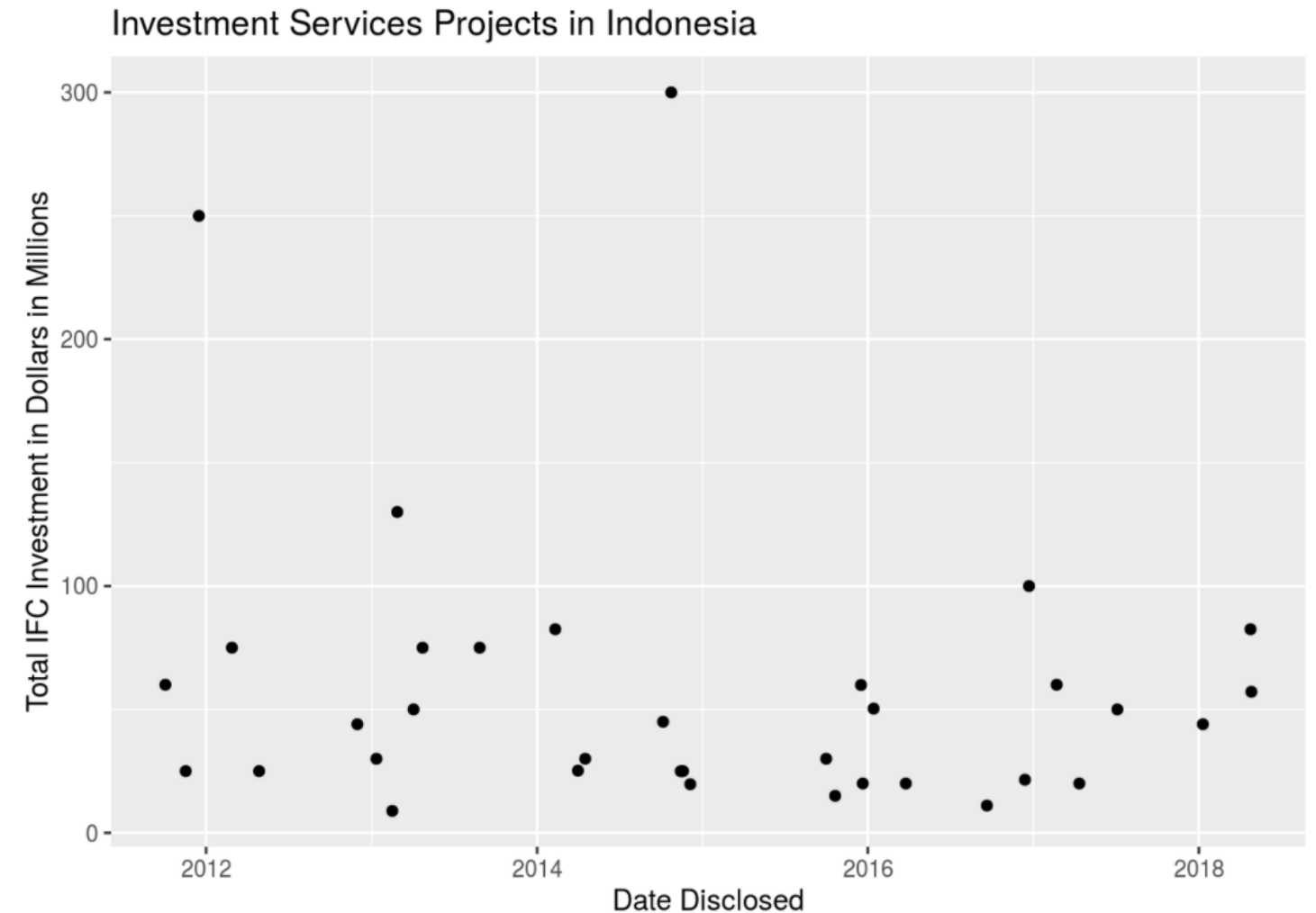
```
21 ```{r investment-annual-summary}
22 ggplot(investment_annual_summary, aes(x = fiscal_year, y = dollars_in_millions,
23   color = region)) +
24   geom_line() +
25   labs(
26     title = "Investment Annual Summary",
27     x = "Fiscal Year",
28     y = "Dollars in Millions"
29   )
30 ```
```



Visualizing projects in Indonesia

```
35 ```{r indonesia-investment-projects}
36 indonesia_investment_projects <- investment_services_projects %>%
37   filter(country == "Indonesia")
38
39 ggplot(indonesia_investment_projects, aes(x = date_disclosed, y =
40   total_investment)) +
41   geom_point() +
42   labs(
43     title = "Investment Services Projects in Indonesia",
44     x = "Date Disclosed",
45     y = "Total IFC Investment in Dollars in Millions"
46   )
47 ```
```

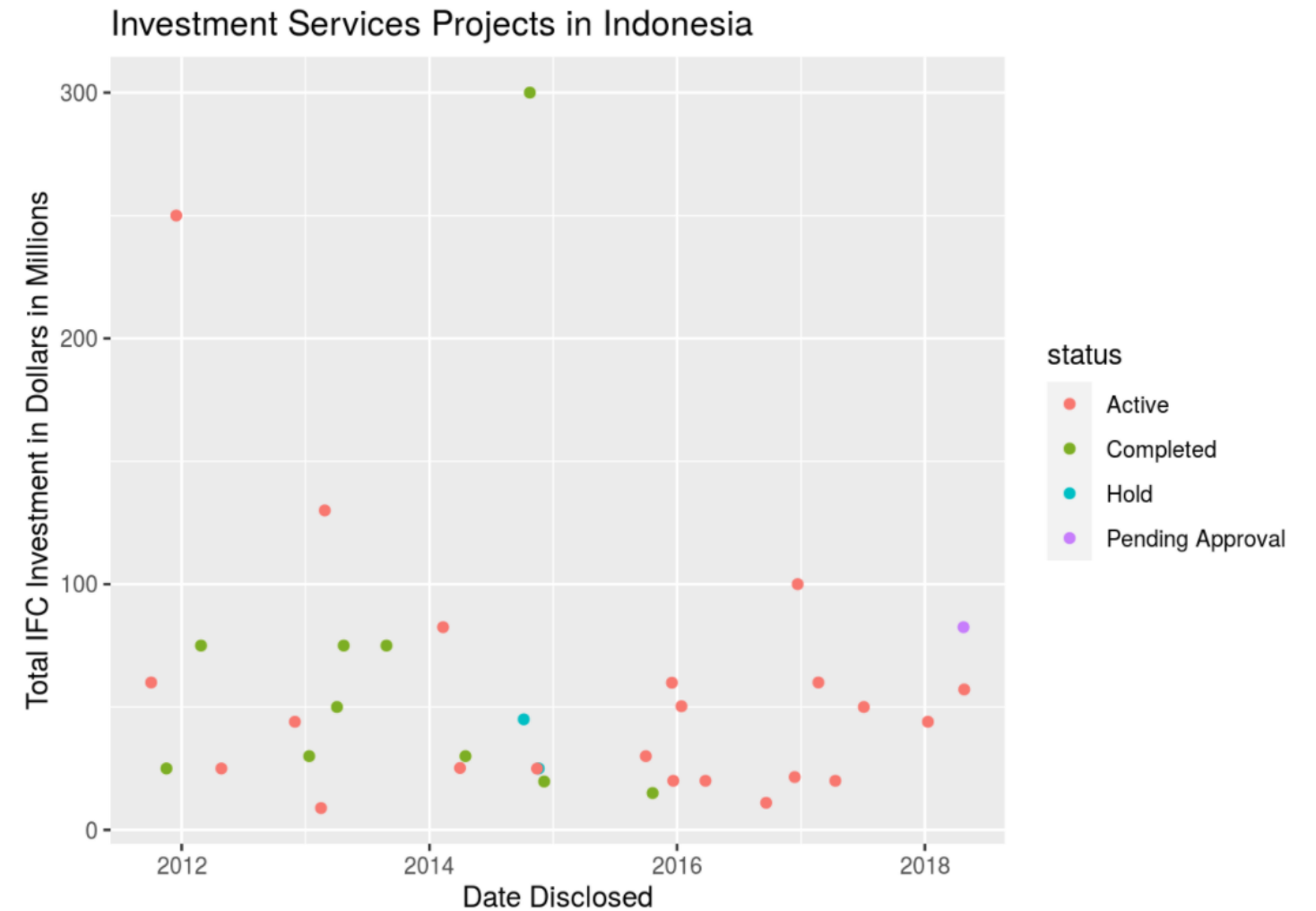
Warning: Removed 3 rows containing missing values (geom_point).



Visualizing project status

```
35 ```{r indonesia-investment-projects}
36 indonesia_investment_projects <- investment_services_projects %>%
37   filter(country == "Indonesia")
38
39 ggplot(indonesia_investment_projects, aes(x = date_disclosed, y =
40   total_investment, color = status)) +
41   geom_point() +
42   labs(
43     title = "Investment Services Projects in Indonesia",
44     x = "Date Disclosed",
45     y = "Total IFC Investment in Dollars in Millions"
46   )
47 ```
```

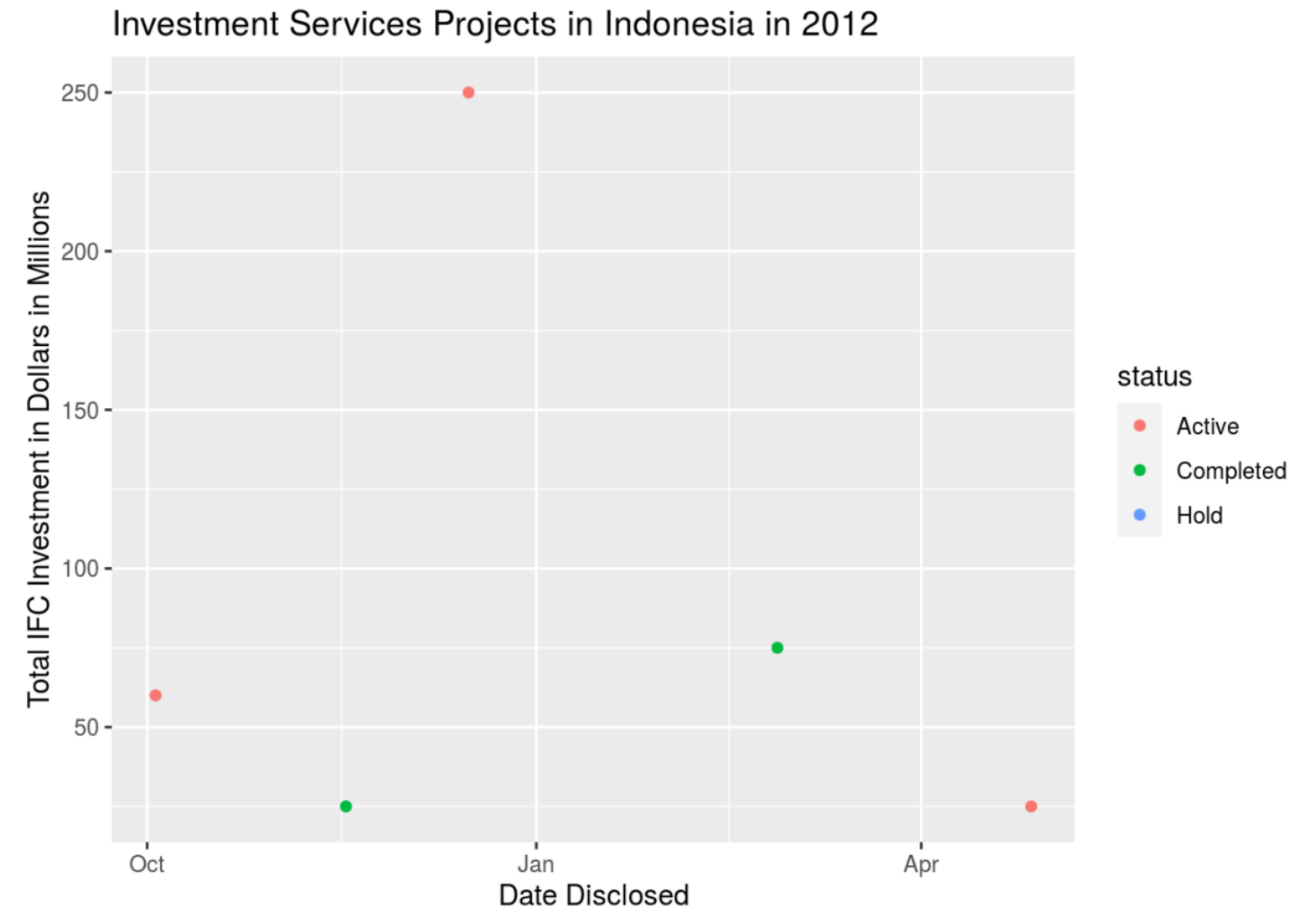
```
## Warning: Removed 3 rows containing missing values (geom_point).
```



Visualizing projects in Indonesia in 2012

```
50 ```{r indonesia-investment-projects-2012}
51 indonesia_investment_projects_2012 <- investment_services_projects %>%
52   filter(country == "Indonesia",
53           date_disclosed >= "2011-07-01",
54           date_disclosed <= "2012-06-30")
55
56 ggplot(indonesia_investment_projects_2012, aes(x = date_disclosed, y =
57   total_investment, color = status)) +
58   geom_point() +
59   labs(
60     title = "Investment Services Projects in Indonesia in 2012",
61     x = "Date Disclosed",
62     y = "Total IFC Investment in Dollars in Millions"
63   )
64 ```
```

Warning: Removed 1 rows containing missing values (geom_point).



Missing values

```
indonesia_investment_projects_2012
```

```
# A tibble: 6 x 7
  project_name      status risk_manage... guarantee_inv... loan_investment equity_investment total_investment
  <chr>            <chr>          <dbl>          <dbl>          <dbl>          <dbl>          <dbl>
1 FHP Indonesia I  Active         NA            NA            NA            25            25
2 LMS Toll Project Hold         NA            NA            NA            NA            NA
3 CIMB Niaga Sr.   Completed      NA            NA            75            NA            75
4 BTPN Loan II     Active         NA            NA            250           NA            250
5 Medco Power 2011 Completed      NA            NA            NA            25            25
6 Wintermar Group Active         NA            NA            60            NA            60
```

Plot options

REPORTING WITH R MARKDOWN



Amy Peterson

Curriculum Manager at DataCamp

Figure dimensions

- `fig.width`
- `fig.height`

Figure dimensions

```
26 ```{r investment-annual-summary, fig.width = 5, fig.height = 3}
27 ggplot(investment_annual_summary, aes(x = fiscal_year, y =
28   dollars_in_millions, color = region)) +
29   geom_line() +
30   labs(
31     title = "Investment Annual Summary",
32     x = "Fiscal Year",
33     y = "Dollars in Millions"
34   )
35 ```
```

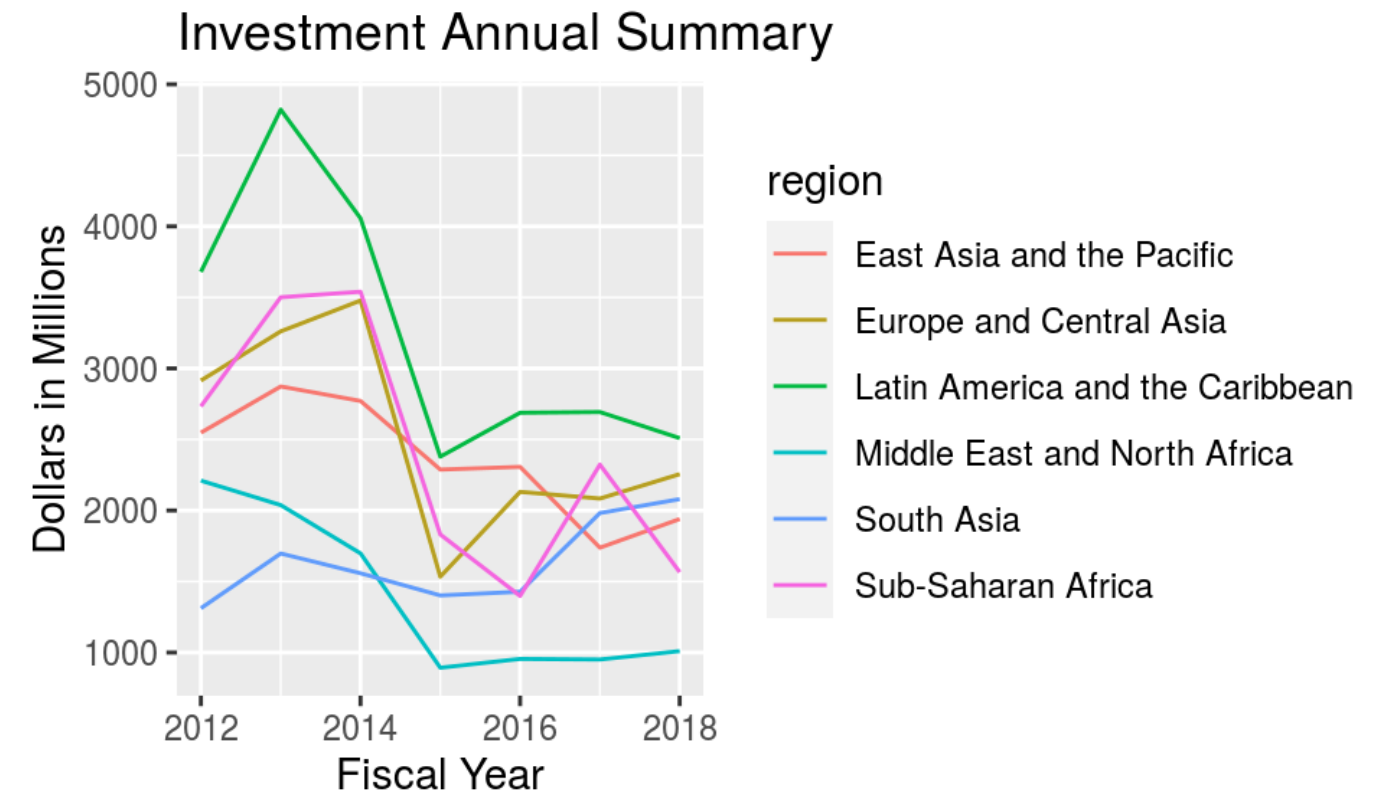
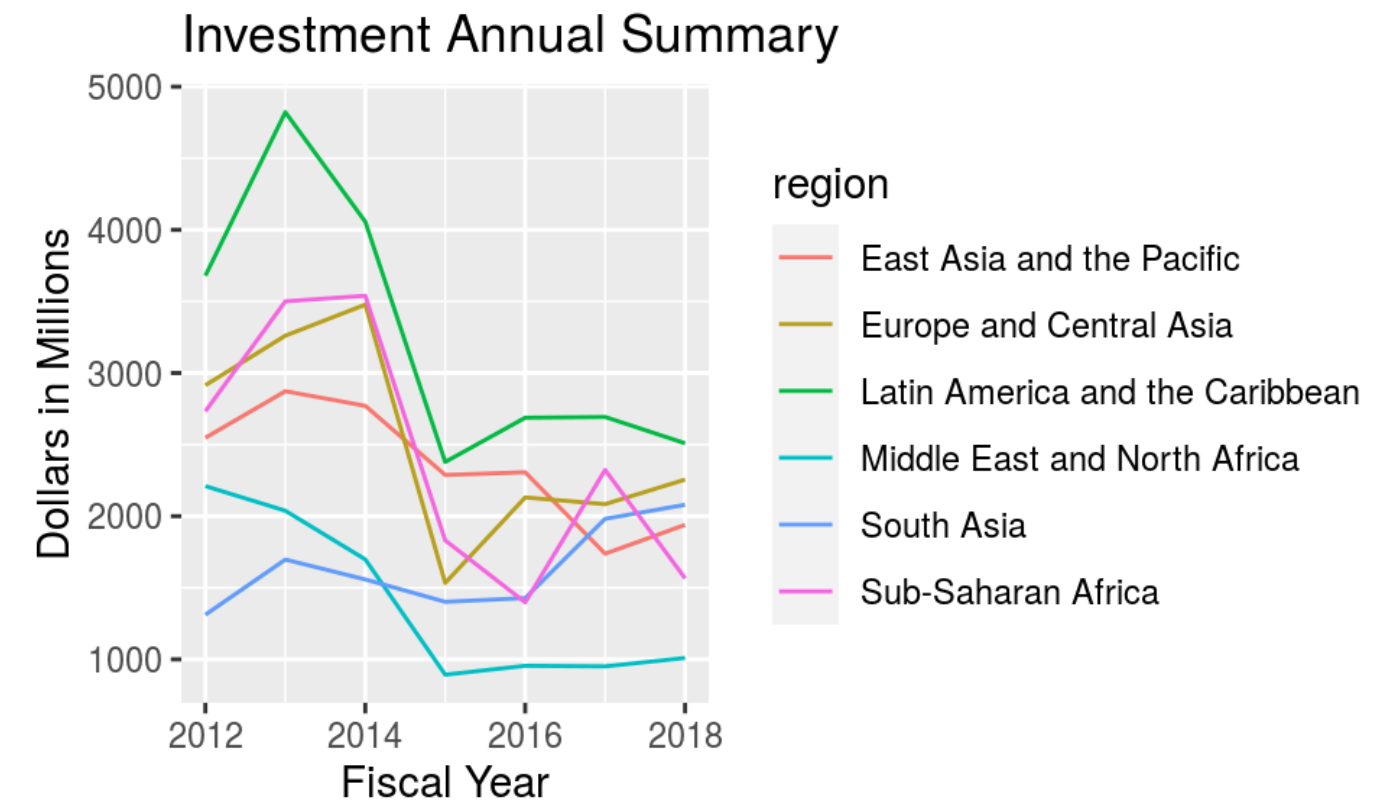


Figure dimensions

```
26 ```{r investment-annual-summary, fig.dim = c(5, 3)}
27 ggplot(investment_annual_summary, aes(x = fiscal_year, y =
28   dollars_in_millions, color = region)) +
29   geom_line() +
30   labs(
31     title = "Investment Annual Summary",
32     x = "Fiscal Year",
33     y = "Dollars in Millions"
34   )
35 ```
```



Output dimensions

- `out.width`
- `out.height`

Output dimensions

```
26 ```{r investment-annual-summary, out.width = '50%'}
27 ggplot(investment_annual_summary, aes(x = fiscal_year, y =
28   dollars_in_millions, color = region)) +
29   geom_line() +
30   labs(
31     title = "Investment Annual Summary",
32     x = "Fiscal Year",
33     y = "Dollars in Millions"
34   )
35 ```
```

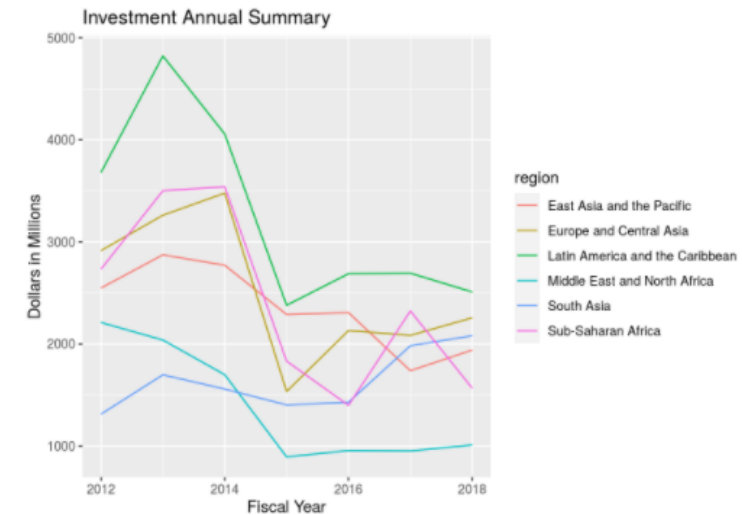


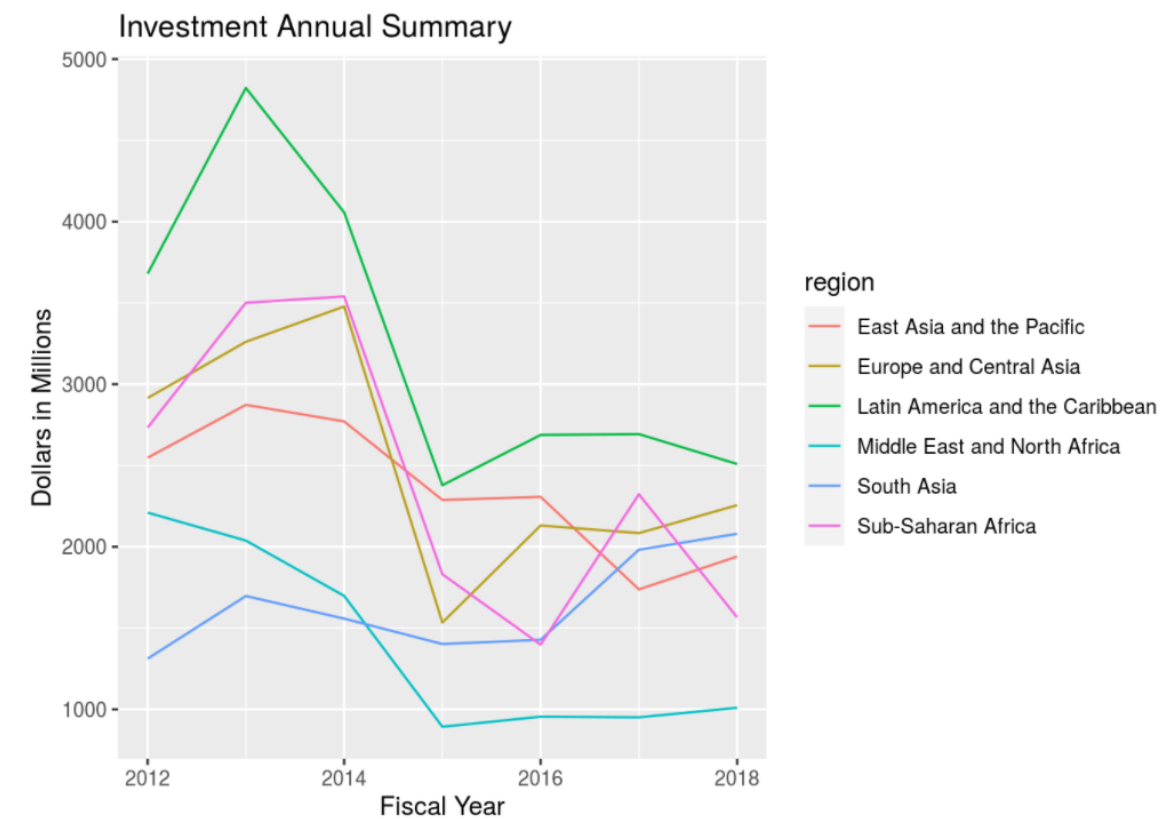
Figure alignment

- `fig.align`
 - `'left'`
 - `'right'`
 - `'center'`

Figure alignment

```
26 ```{r investment-annual-summary, out.width = '80%', fig.align = 'left'}
27 ggplot(investment_annual_summary, aes(x = fiscal_year, y =
28   dollars_in_millions, color = region)) +
29   geom_line() +
30   labs(
31     title = "Investment Annual Summary",
32     x = "Fiscal Year",
33     y = "Dollars in Millions"
34   )
35 ```
```

```
ggplot(investment_annual_summary, aes(x = fiscal_year, y = dollars_in_millions, color =
region)) +
  geom_line() +
  labs(
    title = "Investment Annual Summary",
    x = "Fiscal Year",
    y = "Dollars in Millions"
  )
```



Local vs. global options

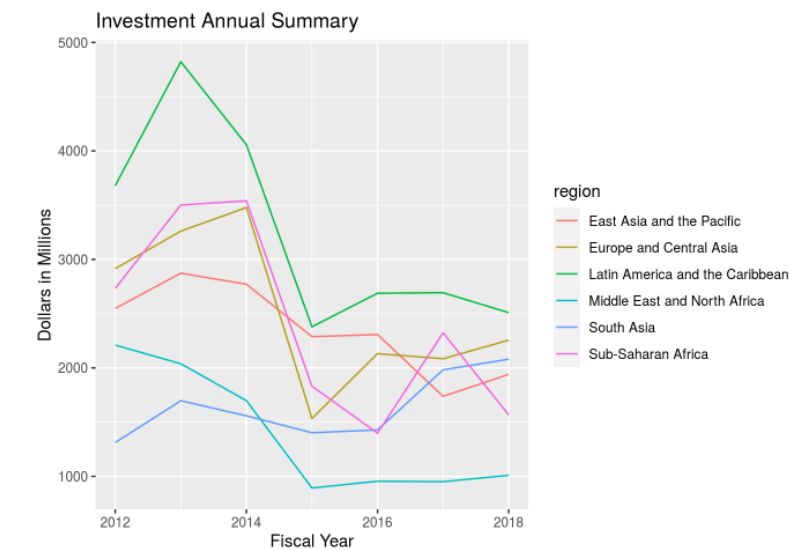
```
26 ```{r investment-annual-summary, fig.align = 'center'}
27 ggplot(investment_annual_summary, aes(x = fiscal_year, y =
28   dollars_in_millions, color = region)) +
29   geom_line() +
30   labs(
31     title = "Investment Annual Summary",
32     x = "Fiscal Year",
33     y = "Dollars in Millions"
34   )
35 ```
36 ### Investment Projects in Indonesia
37
38 The `investment_services_projects` dataset provides information about each
39 investment project from 2012 to 2018. Information listed includes the project
40 name, company name, sector, project status, and investment amounts.
41 ```{r indonesia-investment-projects, fig.align = 'center'}
42 indonesia_investment_projects <- investment_services_projects %>%
43   filter(country == "Indonesia")
44
45 ggplot(indonesia_investment_projects, aes(x = date_disclosed, y =
46   total_investment, color = status)) +
47   geom_point() +
48   labs(
49     title = "Investment Services Projects in Indonesia",
50     x = "Date Disclosed",
51     y = "Total IFC Investment in Dollars in Millions"
52   )
53 ```
```

```
7 ```{r setup, include = FALSE}
8 knitr::opts_chunk$set(fig.align = 'center', echo = TRUE)
9 ```
```

Setting options globally

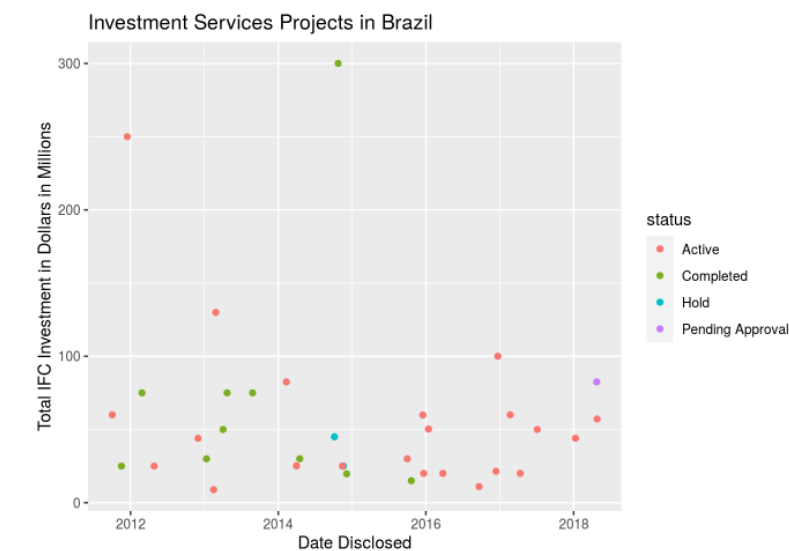
```
1 ---
2 title: "Investment Report"
3 date: "`r format(Sys.time(), '%d %B %Y')`"
4 output: html_document
5 ---
6
7 ```{r setup, include = FALSE}
8 knitr::opts_chunk$set(fig.align = 'left', echo = TRUE)
9 ```
```

Investment Annual Summary



Investment Projects in Indonesia

Warning: Removed 3 rows containing missing values (geom_point).



Adding captions

```
26 ```{r investment-annual-summary, out.width = '85%', fig.cap = 'Figure 1.1 The
27 Investment Annual Summary for each region for the 2012 to 2018 fiscal years.}
28 ggplot(investment_annual_summary, aes(x = fiscal_year, y = dollars_in_millions,
29 color = region)) +
30   geom_line() +
31   labs(
32     title = "Investment Annual Summary",
33     x = "Fiscal Year",
34     y = "Dollars in Millions"
35   )
36 ```
```

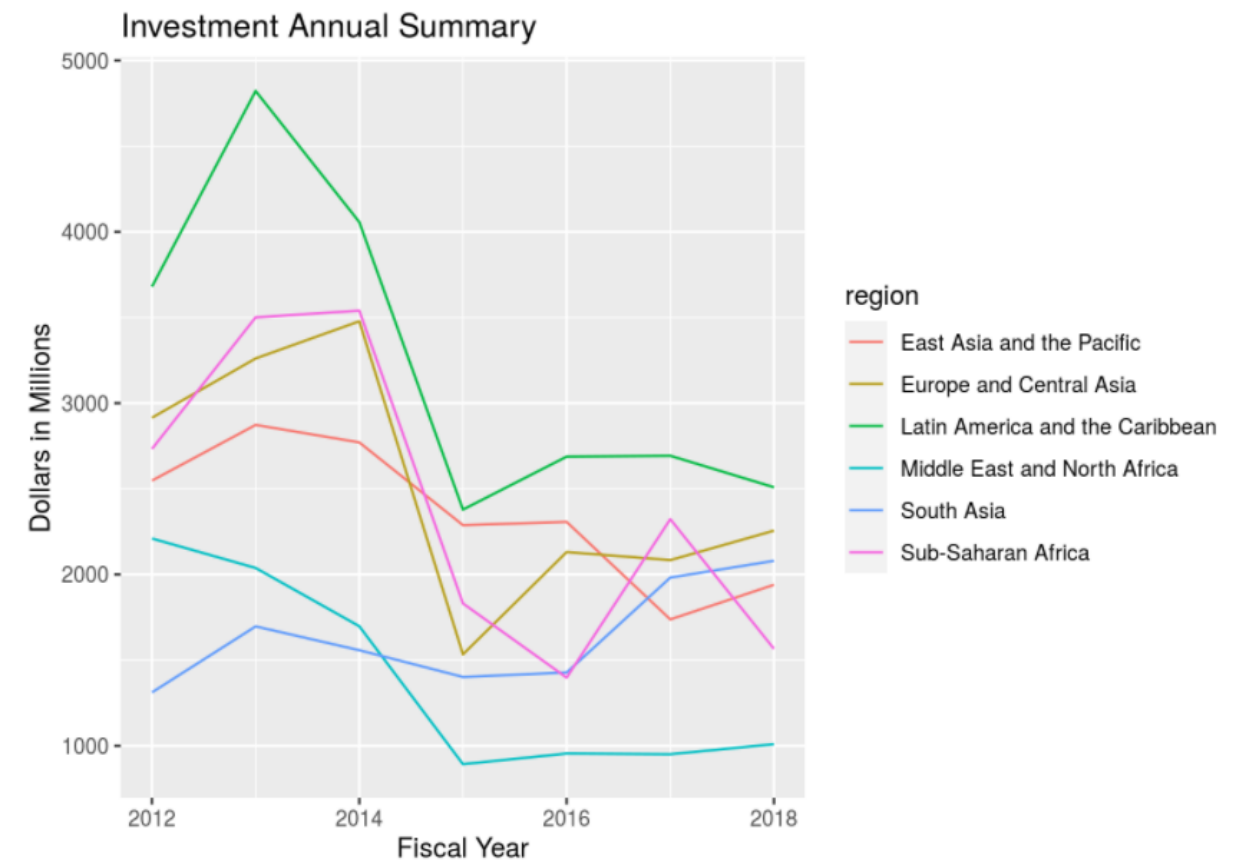


Figure 1.1 The Investment Annual Summary for each region for the 2012 to 2018 fiscal years.