

Working with relationships

INTERMEDIATE DATA MODELING IN POWER BI

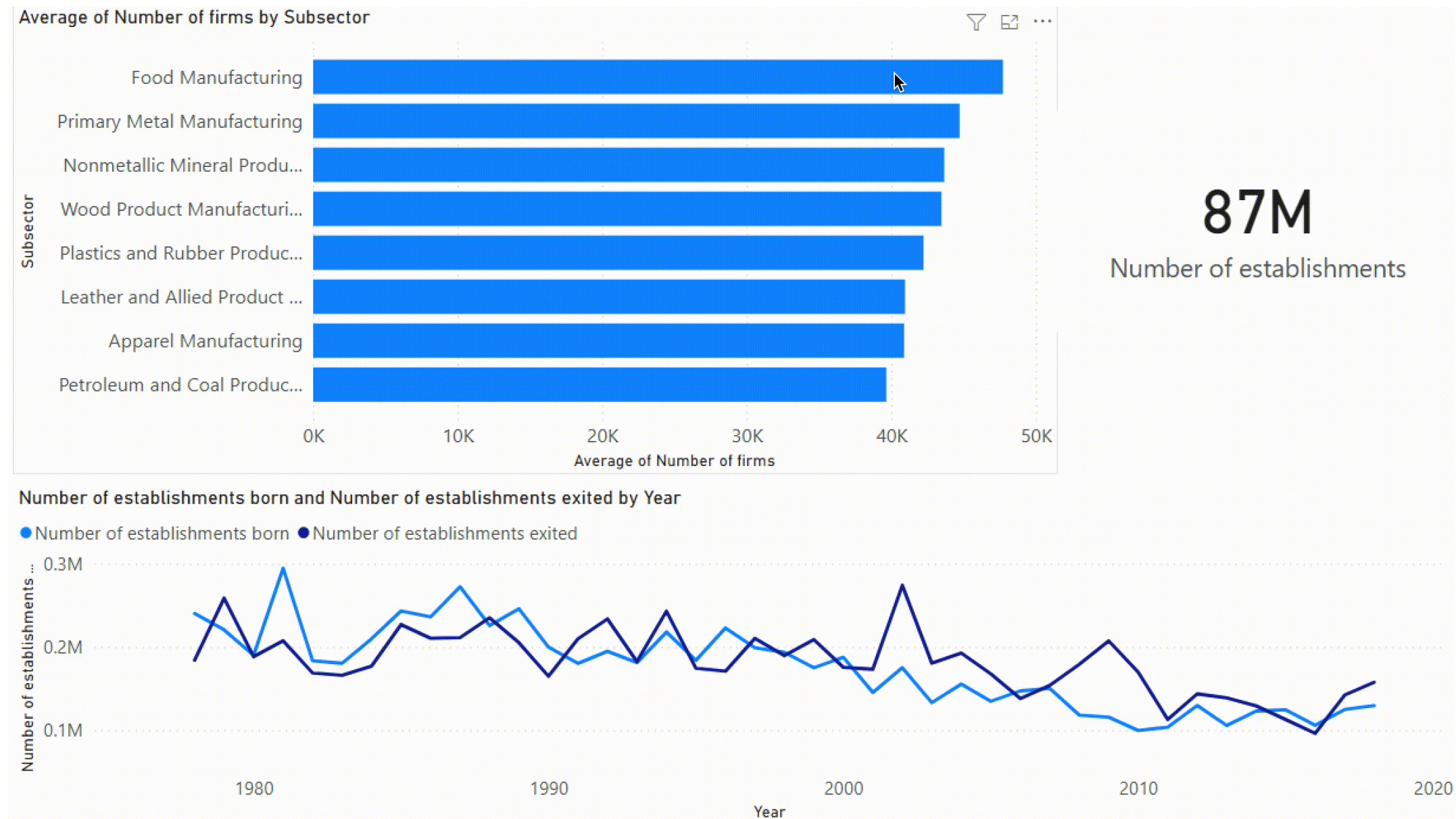


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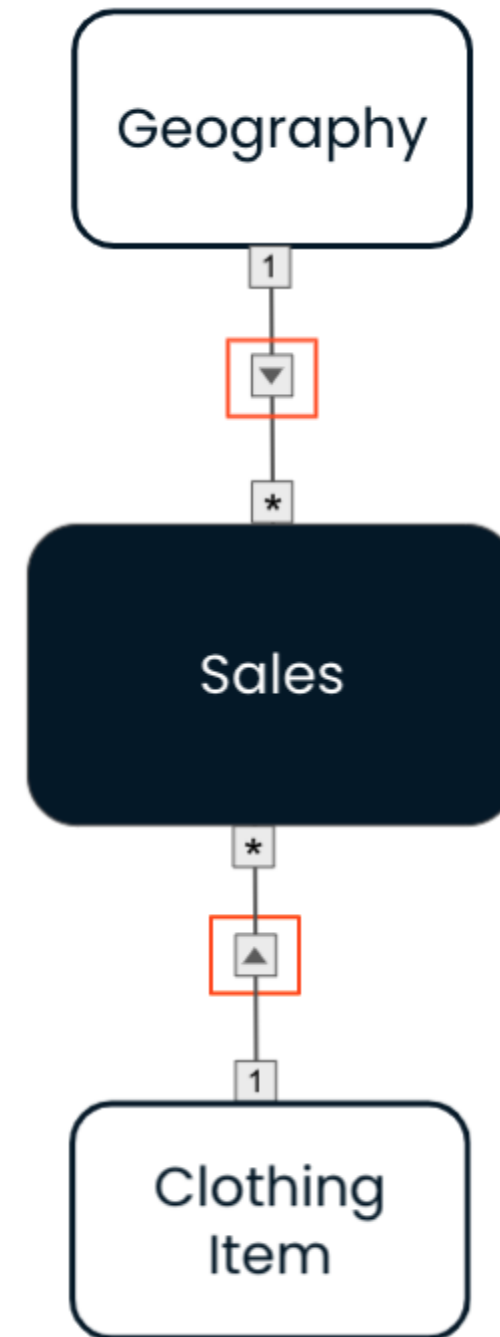
Cross filtering

Cross-filtering: Selecting a value in one visual narrows down visible data in other visuals



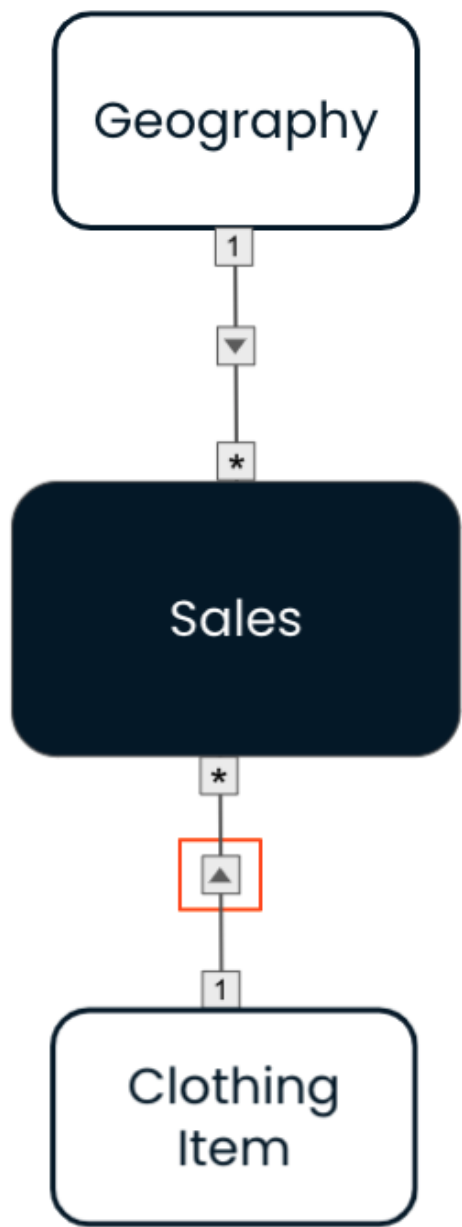
Filter direction

- All relationships have a cross filter direction
- Determines the direction that filters will propagate
- Example:
 - Geography -> Sales
 - Clothing Item -> Sales
- From Dimension to Fact



Filter direction

Data model:



Dimension - Clothing Item

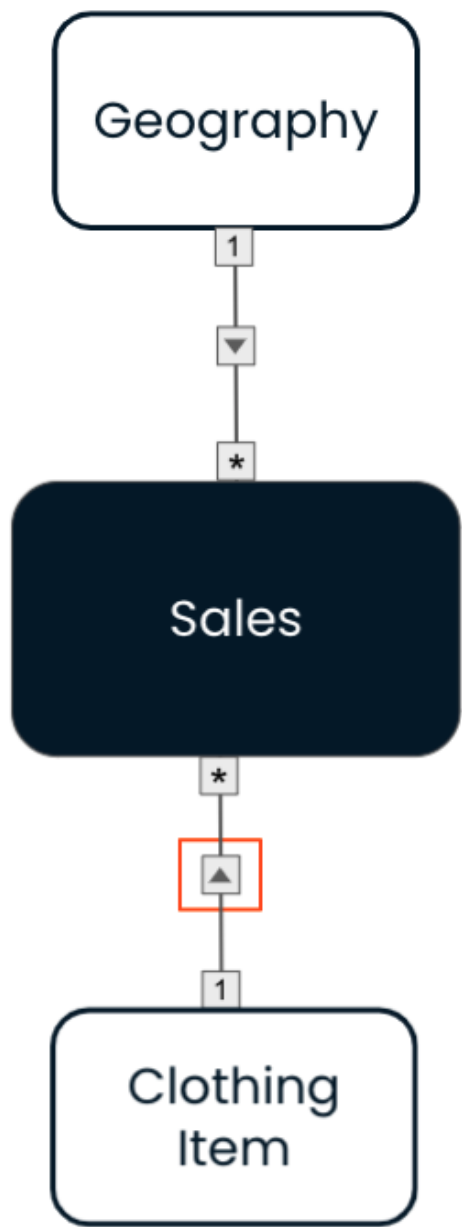
| Product Id | Product |
|------------|---------|
| C1 | T-shirt |
| C2 | Socks |
| C3 | Sweater |

Fact - Sales

| Id | Units | Amount | Product Id |
|-----|-------|--------|------------|
| 001 | 3 | 60 | C2 |
| 002 | 2 | 10 | C1 |
| 003 | 1 | 70 | C3 |
| 004 | 1 | 50 | C3 |
| 005 | 5 | 50 | C3 |

Filter direction

Data model:



Dimension - Clothing Item

| Product Id | Product |
|------------|---------|
| C1 | T-shirt |
| C2 | Socks |
| C3 | Sweater |



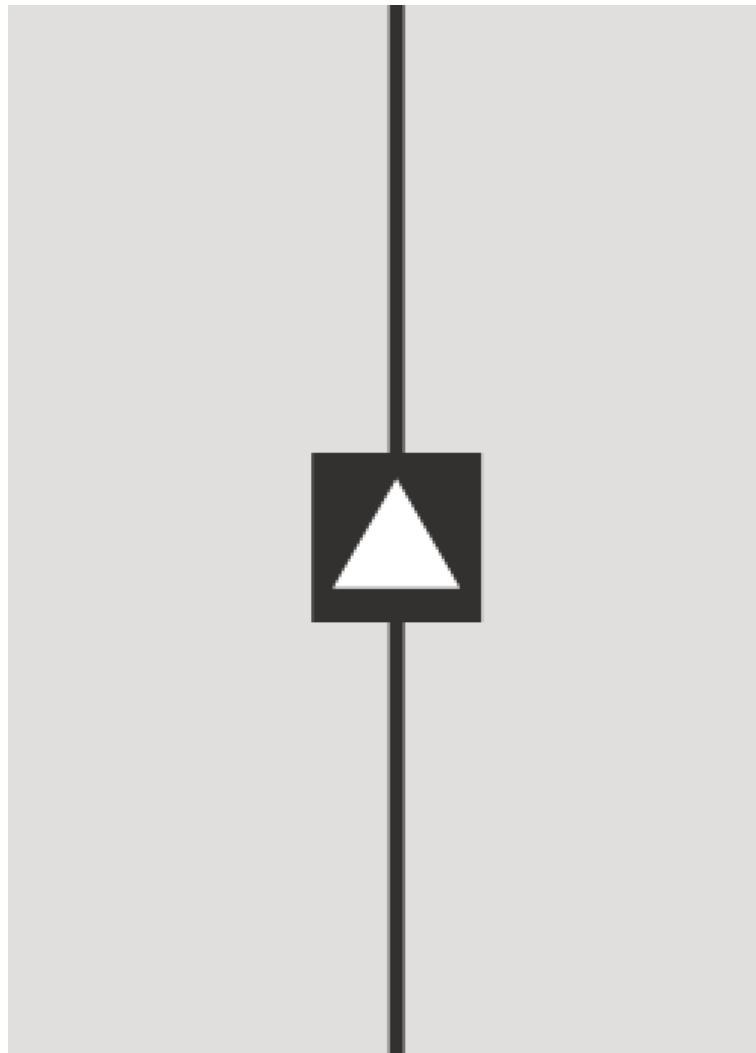
Fact - Sales

| Id | Units | Amount | Product Id |
|-----|-------|--------|------------|
| 001 | 3 | 60 | C2 |
| 002 | 2 | 10 | C1 |
| 003 | 1 | 70 | C3 |
| 004 | 1 | 50 | C3 |
| 005 | 5 | 50 | C3 |

Filter direction options

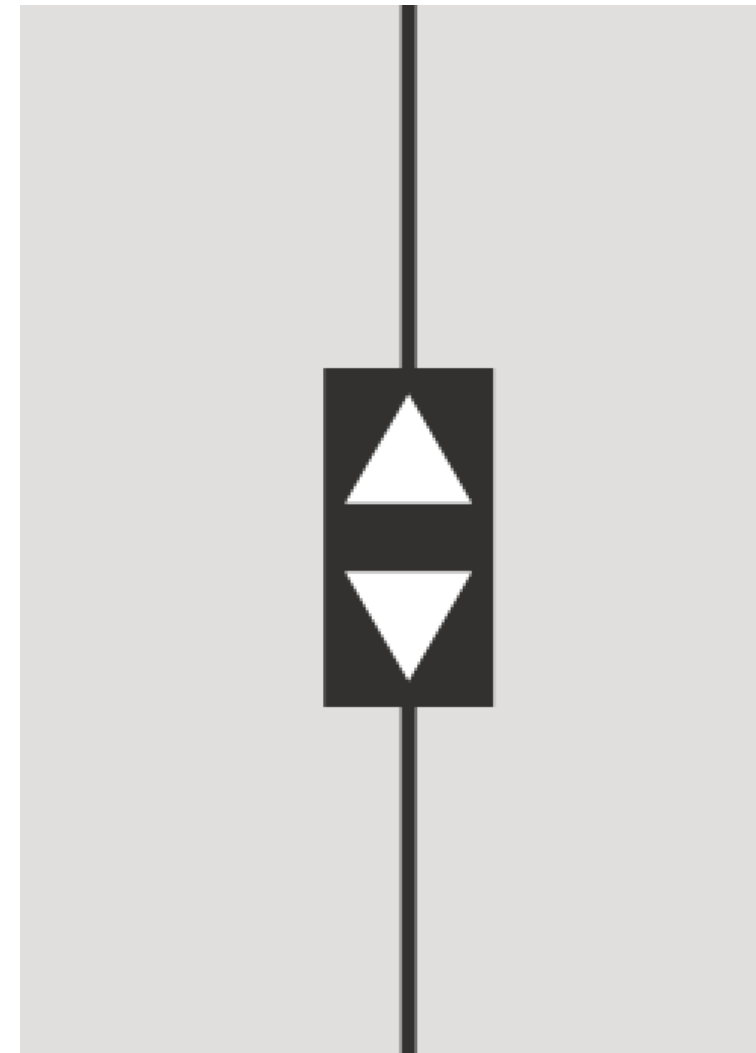
Single direction

Filter in one direction



Bi-directional

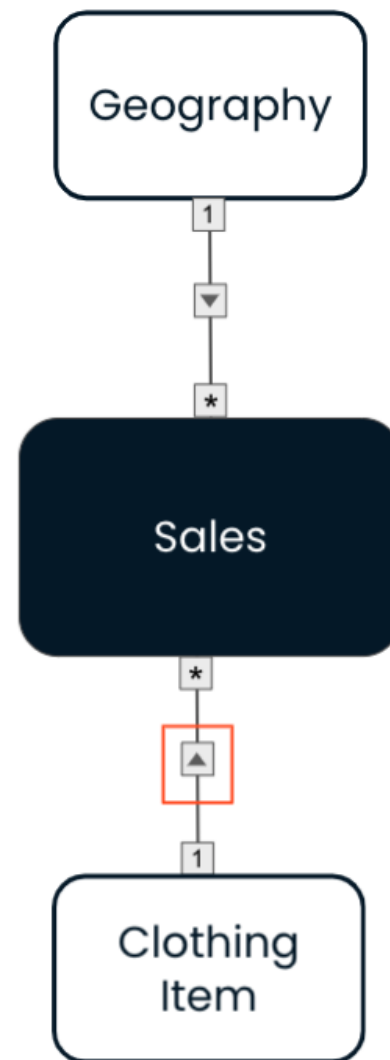
Filter in both directions



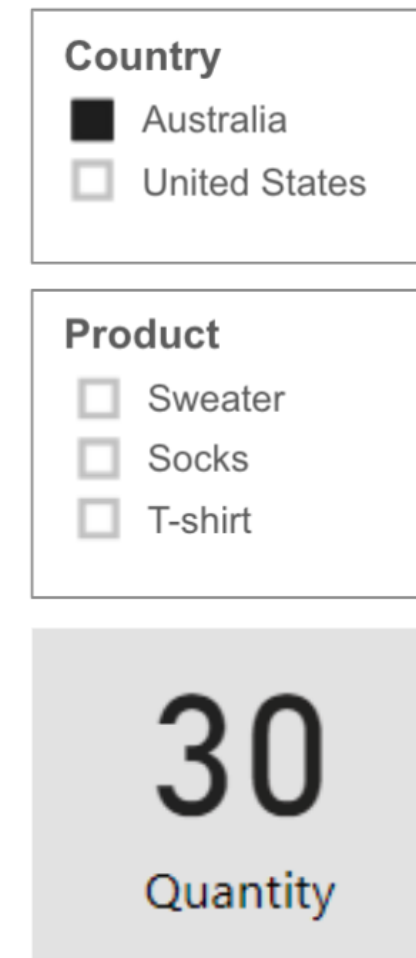
Bi-directional filtering: use case

Show only relevant slicer entries

Data model:



Report view:



Bi-directional filtering: use case

Only sweaters were sold in Australia

Fact – Sales

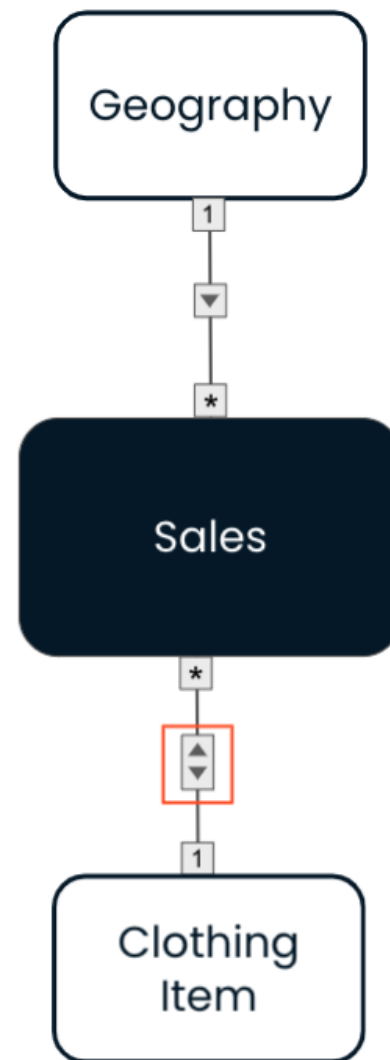
| Id | Units | Amount | Product Id | Country Id |
|-----------|--------------|---------------|-------------------|-------------------|
| 001 | 3 | 60 | C2 | US |
| 002 | 2 | 10 | C1 | US |
| 003 | 1 | 70 | C3 | AU |
| 004 | 1 | 50 | C3 | AU |
| 005 | 5 | 50 | C3 | AU |

*Product Id: C3 = Sweater, Country Id: AU = Australia

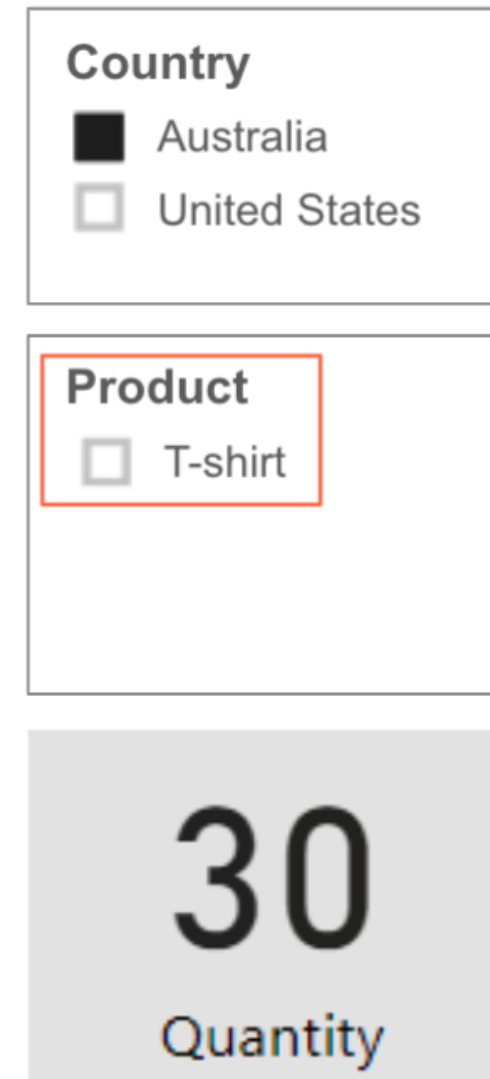
Bi-directional filtering: use case

Show only relevant slicer entries

Data model:

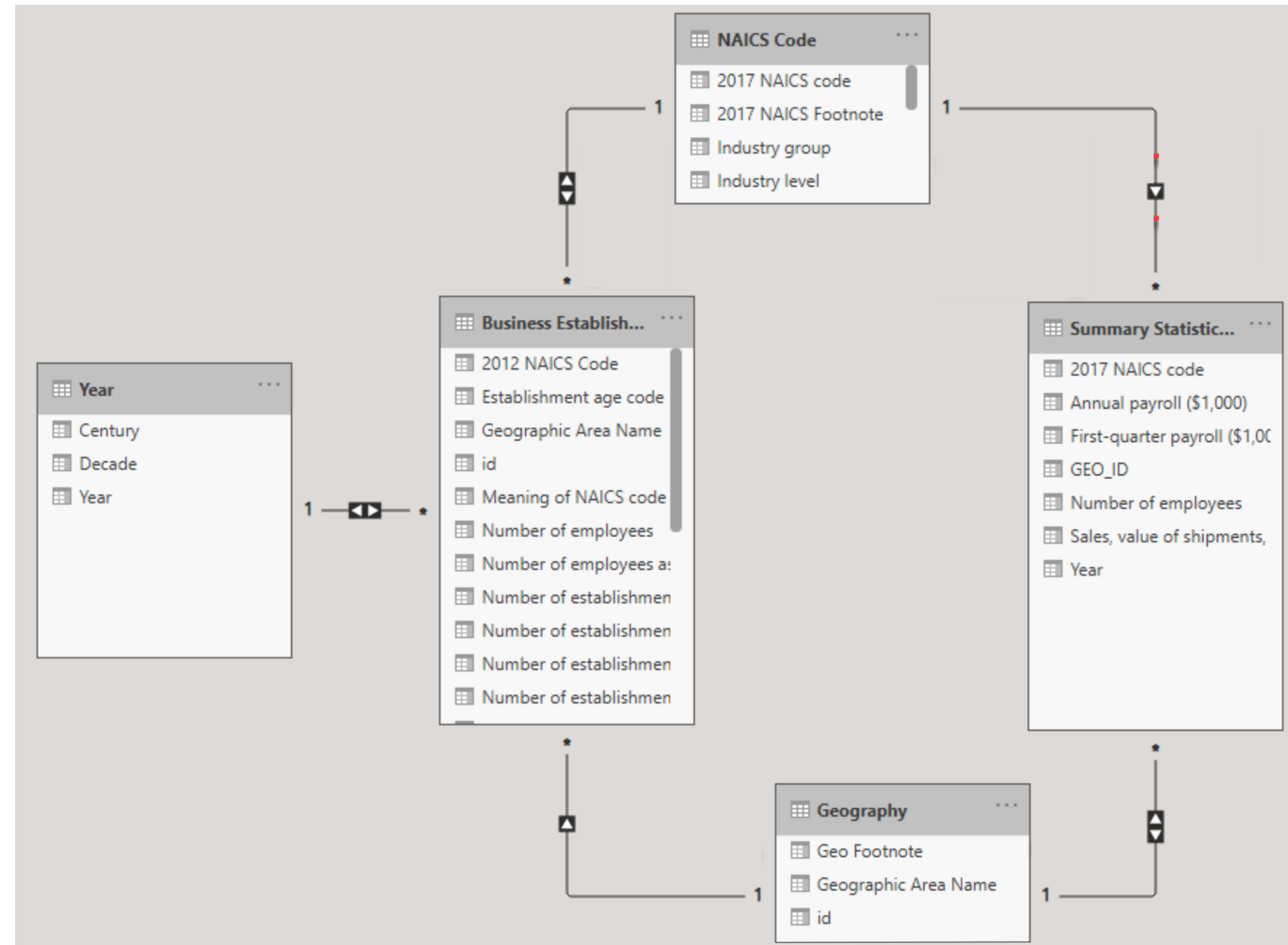


Report view:



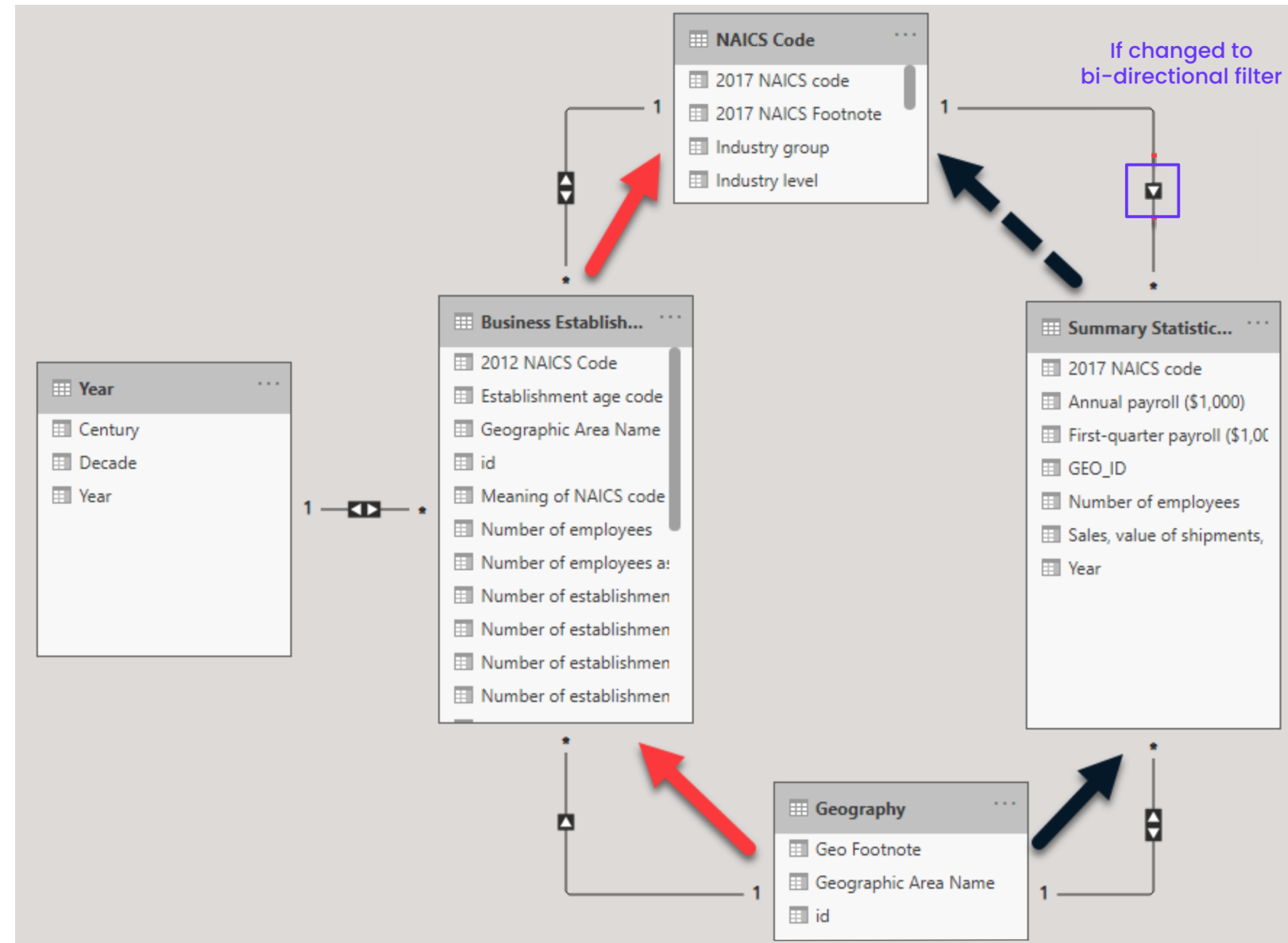
Bi-directional filtering and paths

Bi-directional filters cannot allow for two separate paths between two tables



Bi-directional filtering and paths

Bi-directional filters cannot allow for two separate paths between two tables



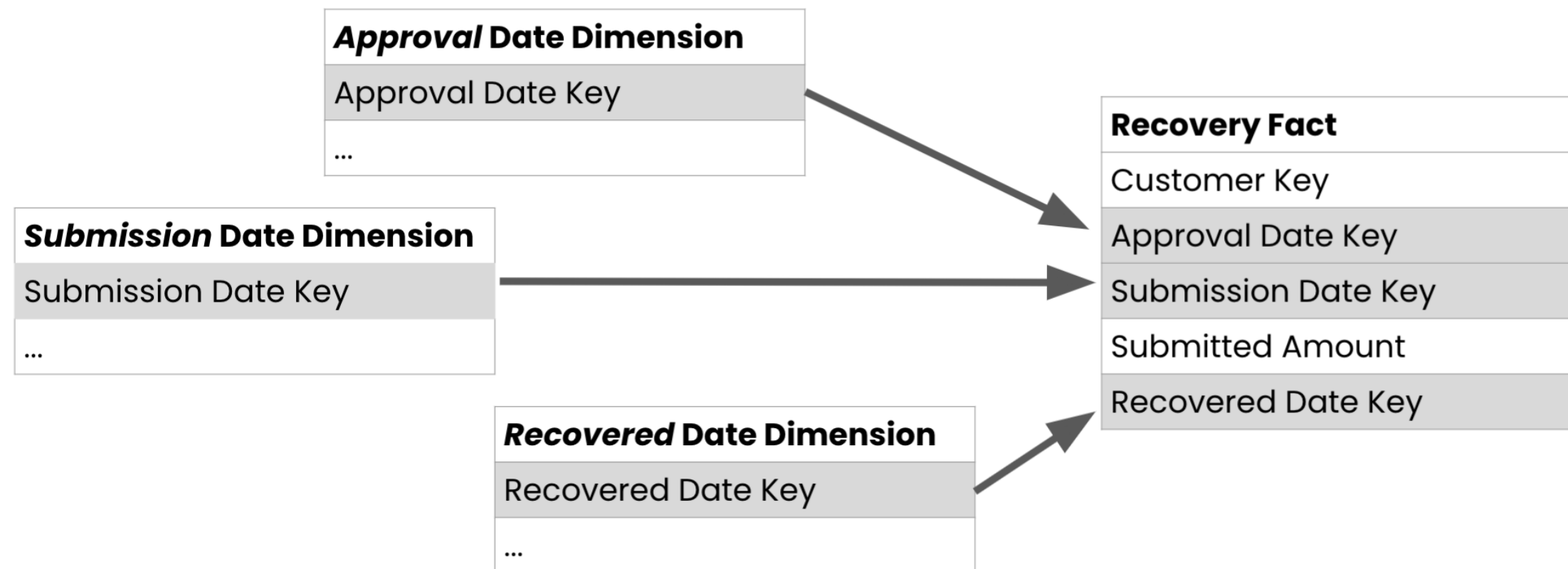
Role-playing dimensions

- Sometimes we need to create multiple relationships between tables



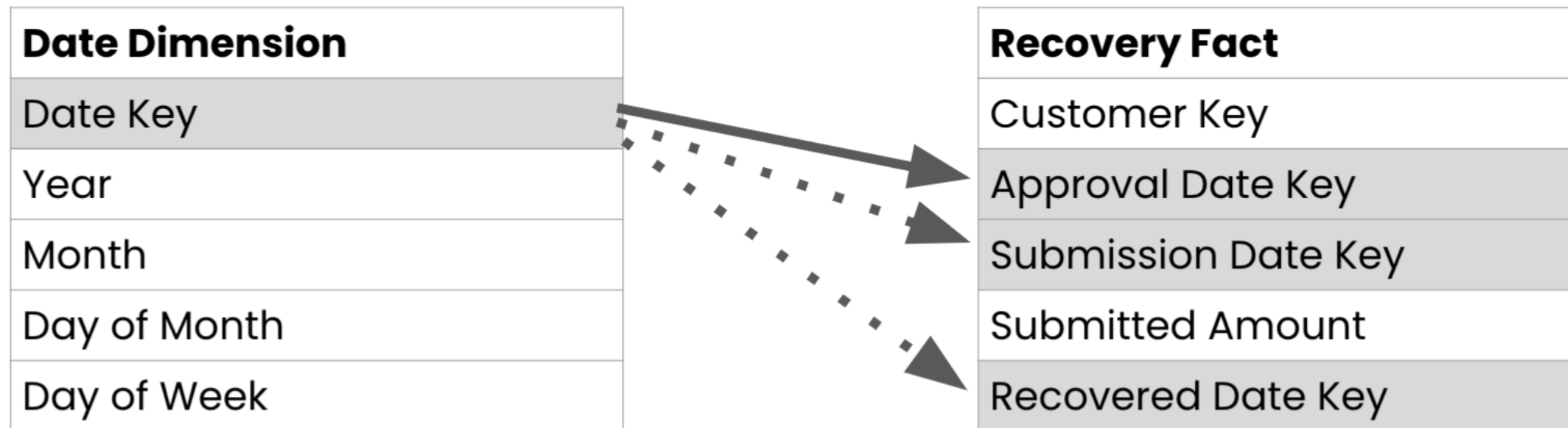
Role-playing dimensions

- Kimball model
- **Role-playing dimension:**
 - Dimension that can filter related facts differently
- Typically implemented as views of the Date dimension



Role-playing dimensions in Power BI

- Create multiple relationships on a dimension, but only one is active



- Use `USERELATIONSHIP()` in DAX to specify which relationship to use:

```
Measure Name = CALCULATE(<Measurement function>,  
                        USERELATIONSHIP(<Dimension Key Column>, <Fact Key Column>)
```

Let's practice!

INTERMEDIATE DATA MODELING IN POWER BI

Cross-filtering and role-playing Dimensions

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Let's practice!

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