Annex:
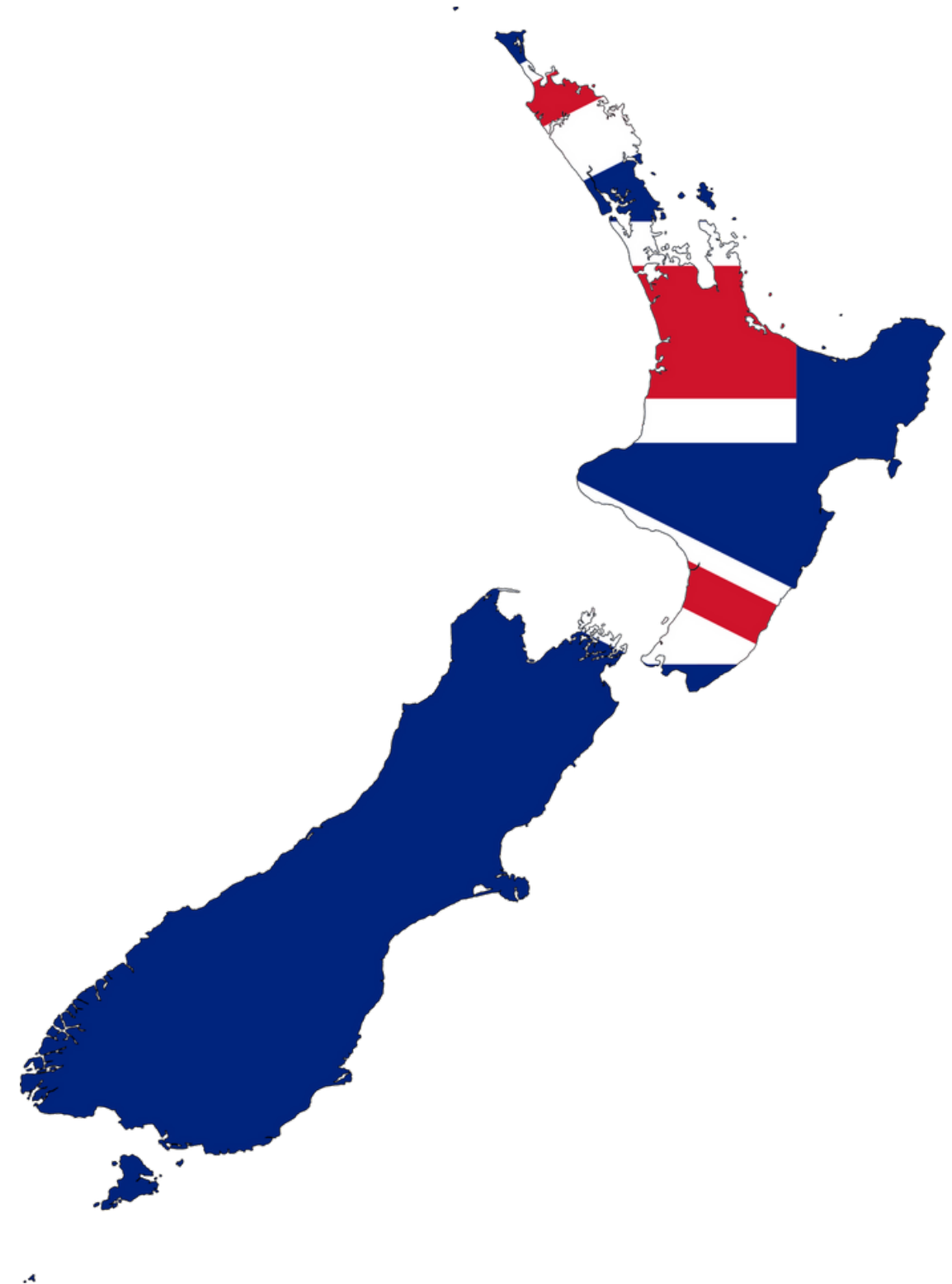
Analyzing New Zealand's Trade: A Data-driven Perspective on Exports and Imports

BY PABLO FRANCISCO RESCH

Implemented technological tools

01 Excel

The exploratory and initial cleaning stage was performed in Microsoft Excel.

02 Figma

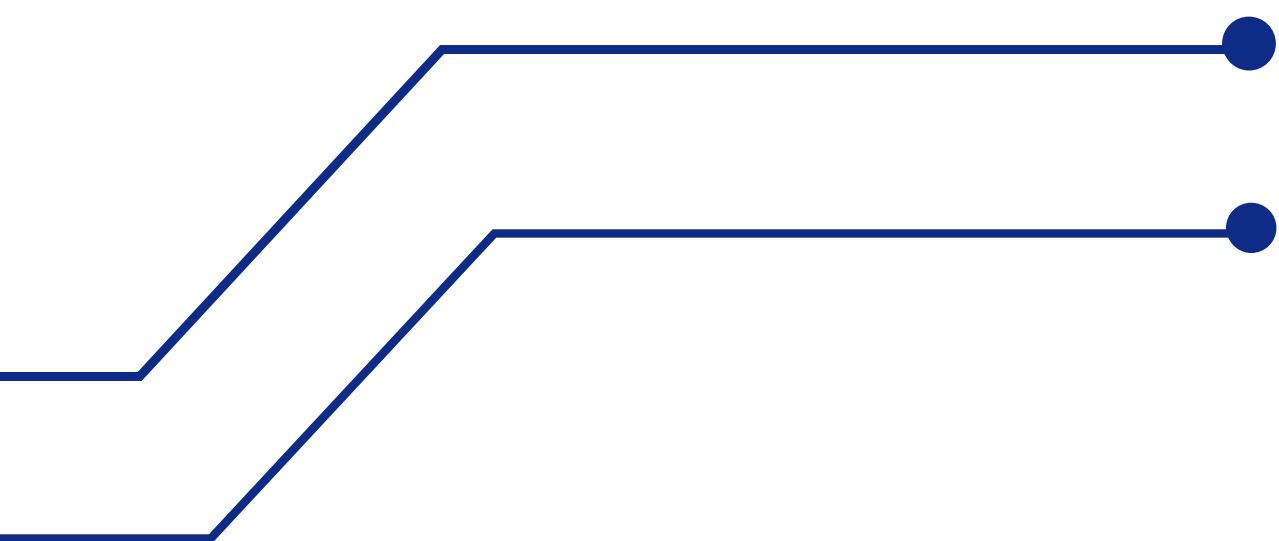This tool was used to create the mockup of what the visualization would look like.

03 Power BI

Power BI has been used to generate the visualization in a professional and interactive manner.
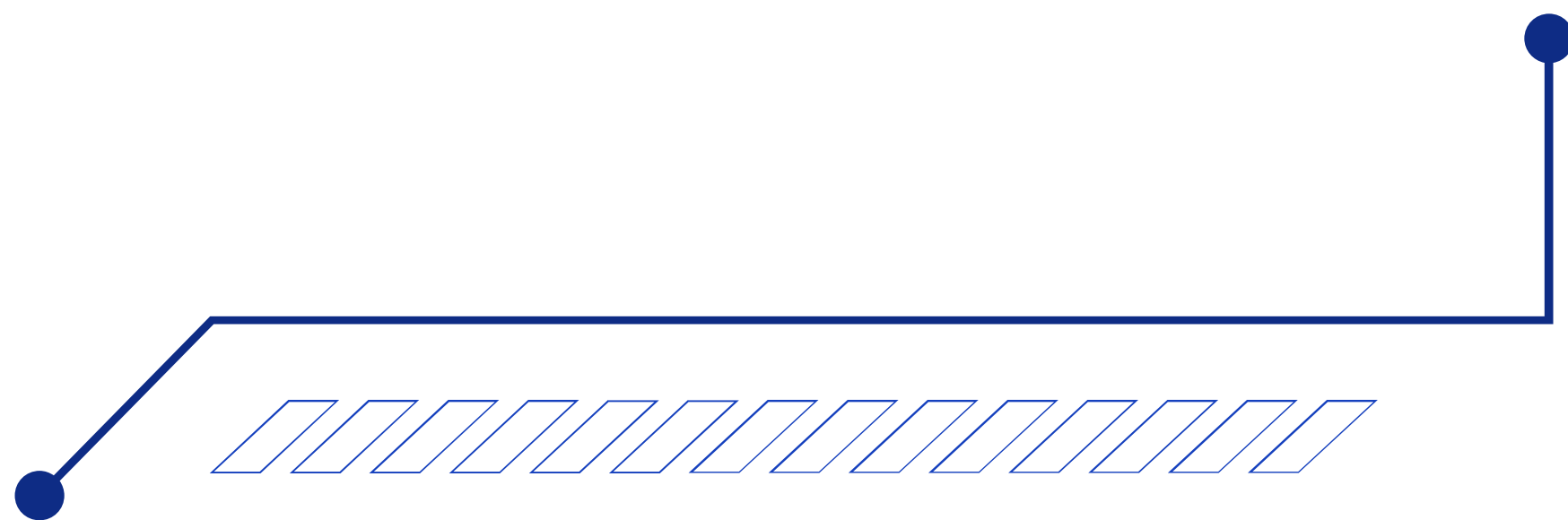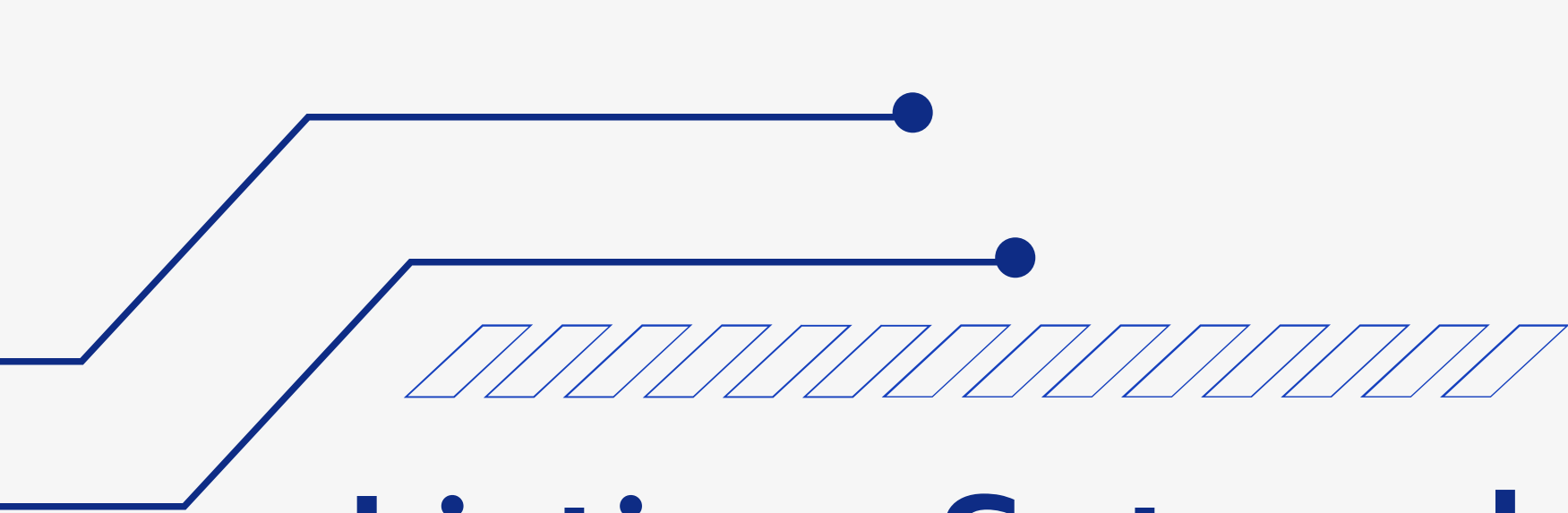
04 Canva

This report has been created using Canva.

Data Base

Listing: Set and Tablas

The project consists of three groups or sets of tables that serve as input to address the stated objectives. Each of these sets, along with their respective tables, is defined below:

SET 1

01 exports

02 imports

03 exchange_rate

04 period

SET 2

01 exports_by_destination

02 imports_by_country

03 country_by_code

SET 3

01 exports_by_sitc

02 imports_by_sitc

03 sitc
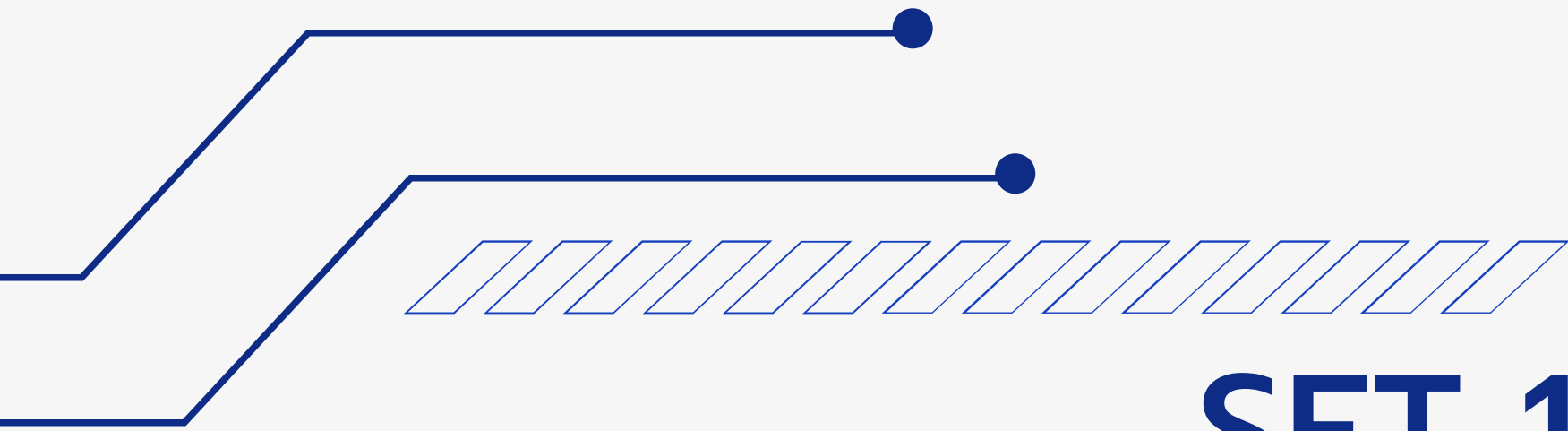
SET 1 - Tablas

01 exports

This table presents the value of New Zealand's exports, measured in its national currency (NZ dollar), in terms of FOB (Free On Board) value, along with adjustments for trend and seasonality. Additionally, it displays the value of re-exports.

02 imports

This table presents the value of New Zealand's exports, measured in its national currency (NZ dollar), in terms of CIF (Cost, Insurance and Freight) value, along with adjustments for trend and "Value For Duty." Additionally, it displays the value corresponding to significant imports.

03 exchange_rate

The table contains the historical exchange rate series of New Zealand's national currency against the currencies of its major trading partners.

04 period

This table contains the time series data that encompasses this work and is related to the other tables in this set.
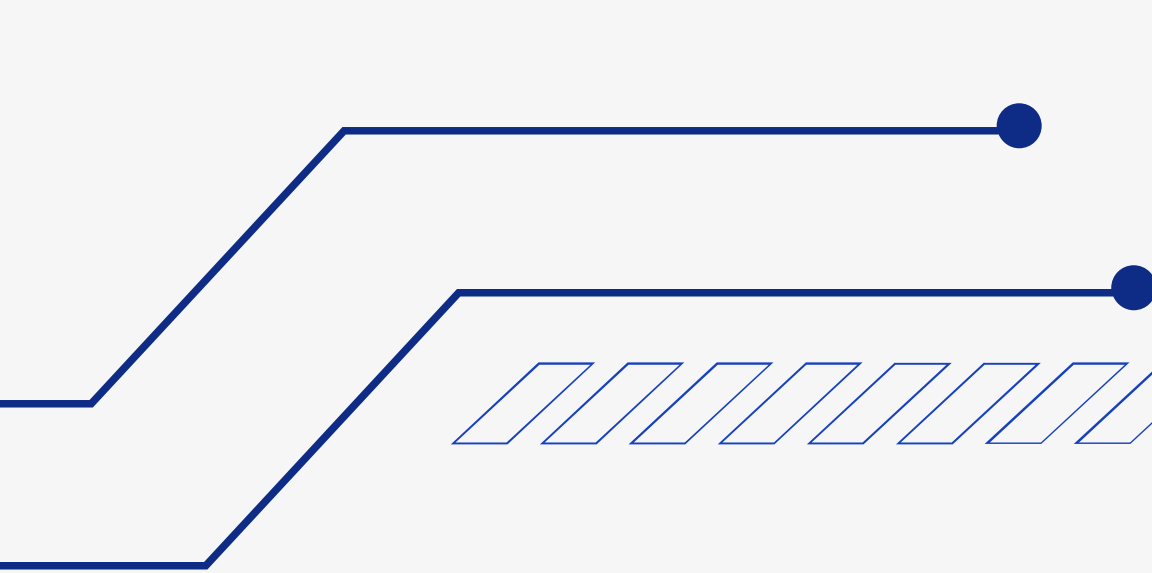
Table - exports

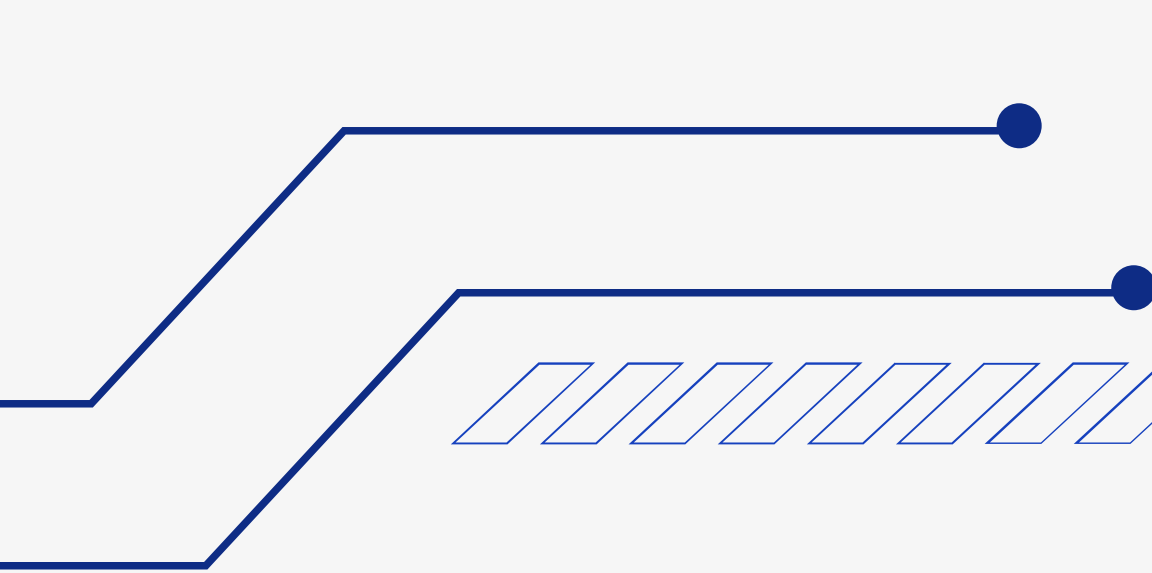| KEY TYPE	FIELD	TYPE	DETAILS
PK	ID	INT	NÚMERO ÚNICO QUE IDENTIFICA EL REGISTRO. PRIMARY KEY
FK	PERIOD_FK	INT	NÚMERO QUE IDENTIFICA EL PERIODO AL QUE PERTENECE EL REGISTRO. FOREIGN KEY
	EXPORTS_FOB	DECIMAL	VALOR DE EXPORTACIONES EN MILLONES DE DOLARES NZ. VALOR FOB
	CHANGE_PREV_YEAR	DECIMAL	VARIACIÓN DE LAS EXPORTACIONES MES A MES CON RELACIÓN AL MISMO PERIODO DEL AÑO ANTERIOR.
	RE_EXPORTS	DECIMAL	VALOR DE PRODUCTOS Y SERVICIOS IMPORTADOS PERO LUEGO EXPORTADOS.
	EXPORTS_SEASONALLY_ADJUSTED	NUMERIC	VALOR DE EXPORTACIONES AJUSTADAS POR ESTACIONALIDAD.
	EXPORTS_TREND	NUMERIC	VALOR DE EXPORTACIONES AJUSTADAS POR TENDENCIA.

Table - imports

KEY TYPE	FIELD	FIELD	DETAILS
PK	ID	INT	NÚMERO ÚNICO QUE IDENTIFICA EL REGISTRO. PRIMARY KEY
FK	PERIOD_FK	INT	NÚMERO QUE IDENTIFICA EL PERIODO AL QUE PERTENECE EL REGISTRO. FOREIGN KEY
	IMPORTS_CIF	DECIMAL	VALOR DE IMPORTACIONES EN MILLONES DE DOLARES NZ. VALOR FOB
	CHANGE_PREV_YEAR	DECIMAL	VARIACIÓN DE IMPORTACIONES MES A MES CON RELACIÓN AL MISMO PERIODO DEL AÑO ANTERIOR.
	LARGE_IMPORT_ITEMS	DECIMAL	VALOR DE PRODUCTOS DE VALOR UNITARIO MAYOR A 100 MILLONES DE $NZ
	IMPORTS_VFD	DECIMAL	VALOR DE IMPORTACIONES ANTES DE ADICIONAR EL COSTO DE SEGUROS Y TE TRASLADO.
	IMPORTS_SEASONALLY_ADJUSTED	NUMERIC	VALOR DE IMPORTACIONES AJUSTADAS POR ESTACIONALIDAD

Table - exchage_rate

KEY TYPE	FIELD	FIELD	DETAILS
PK	ID	INT	NÚMERO ÚNICO QUE IDENTIFICA EL REGISTRO. PRIMARY KEY
FK	PERIOD_FK	INT	NÚMERO QUE IDENTIFICA EL PERIODO AL QUE PERTENECE EL REGISTRO. FOREIGN KEY
	NZ$:US$	DECIMAL	TIPO DE CAMBIO DÓLAR NZ EN RELACIÓN AL DÓLAR DE ESTADOS UNIDOS
	NZ$:£	DECIMAL	TIPO DE CAMBIO DÓLAR NZ EN RELACIÓN A LA LIBRA ÉSTERLINA
	NZ$:A$	DECIMAL	TIPO DE CAMBIO DÓLAR NZ EN RELACIÓN AL DÓLAR AUSTRALIANO
	NZ$:YEN	DECIMAL	TIPO DE CAMBIO DÓLAR NZ EN RELACIÓN AL YEN JAPONES
	NZ$:EURO	DECIMAL	TIPO DE CAMBIO DÓLAR NZ EN RELACIÓN AL EURO
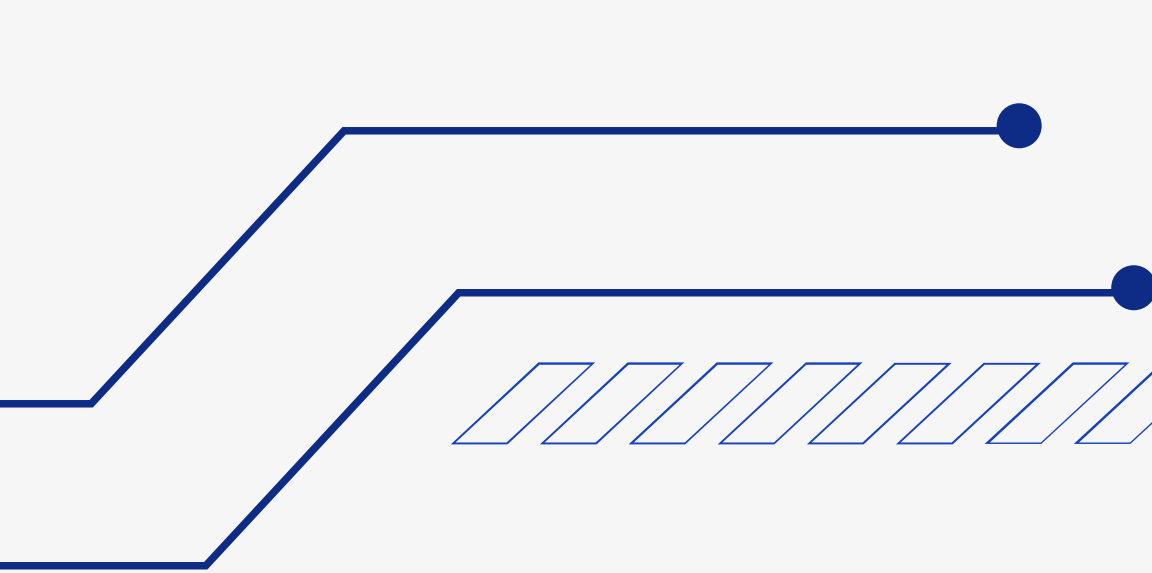
Table - period

KEY TYPE	FIELD	TYPE	DETAILS
PK	PERIOD_PK	INT	NÚMERO ÚNICO QUE IDENTIFICA EL REGISTRO. PRIMARY KEY
	MONTH_YEAR	DATE	SERIE QUE INDICA MES Y AÑO DESDE ABRIL 2021 HASTA ABRIL 2023.

Entity-Relationship Diagram - Set 1
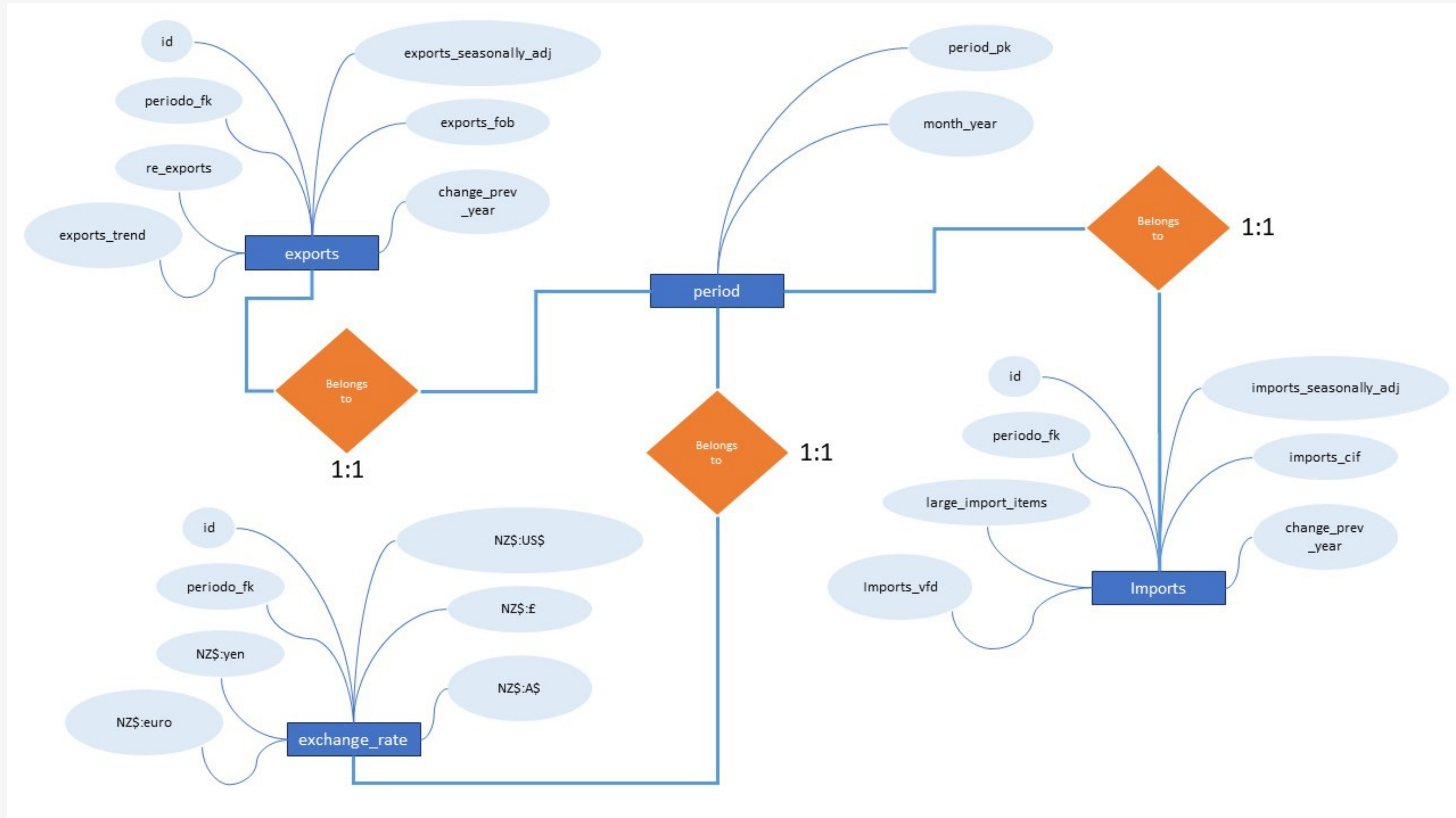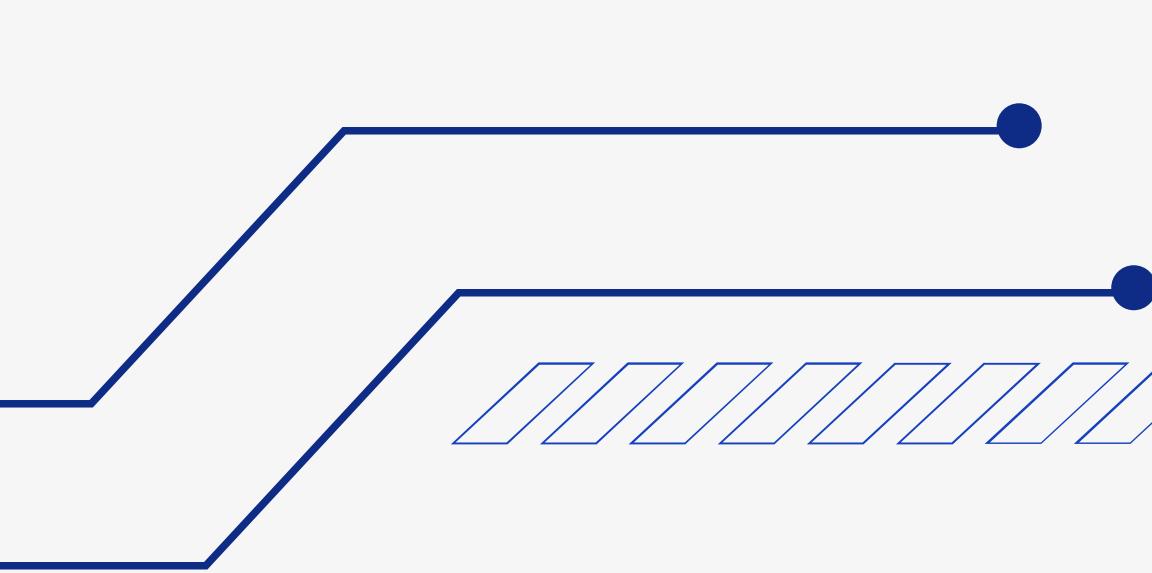
SET 2 - Tables

01 exports_by_destination

The exports by destination" breaks down the destinations to which products are sent and provides information about New Zealand's trading partners.

02 imports_by_country

This table displays the origin of imported products, providing information about trading partners and the diversification of import sources in a specific country.

03 country_by_code

The table includes the set of countries with which New Zealand has trade relations, both for exports and imports. Additionally, it groups them by region.

Table - exports_by_destination

KEY FIELD	FIELD	TYPE	DETAILS
PK	ID	INT	NÚMERO ÚNICO QUE IDENTIFICA EL REGISTRO. PRIMARY KEY
FK	COUNTRY_FK	INT	NÚMERO QUE IDENTIFICA AL PAIS QUE PERTENECE EL REGISTRO. FOREIGN KEY
	MONTH_APRIL_2022	DECIMAL	VALOR DE EXPORTACIONES DE ABRIL 2022
	MONTH_APRIL_2023	DECIMAL	VALOR DE EXPORTACIONESDE ABRIL 2023
	THREE_MONTHS_ENDED_APRIL_2022	DECIMAL	VALOR TRIMESTRAL DE EXPORTACIONES CON MES FINAL ABRIL 2022
	THREE_MONTHS_ENDED_APRIL_2023	DECIMAL	VALOR TRIMESTRAL DE EXPORTACIONES CON MES FINAL ABRIL 2023
	YEAR_ENDED_APRIL_2022	DECIMAL	VALOR ANUALES DE EXPORTACIONES CON MES FINAL ABRIL 2022
	YEAR_ENDED_APRIL_2023	DECIMAL	VALOR ANUALES DE EXPORTACIONES CON MES FINAL ABRIL 2023

Table - imports_by_country

| KEY FIELD	FIELD	TYPE	DETAILS
PK	ID	INT	NÚMERO ÚNICO QUE IDENTIFICA EL REGISTRO. PRIMARY KEY
FK	COUNTRY_FK	INT	NÚMERO QUE IDENTIFICA AL PAIS QUE PERTENECE EL REGISTRO. FOREIGN KEY
	MONTH_APRIL_2022	DECIMAL	VALOR DE IMPORTACIONES DE ABRIL 2022
	MONTH_APRIL_2023	DECIMAL	VALOR DE IMPORTACIONES DE ABRIL 2023
	THREE_MONTHS_ENDED_APRIL_2022	DECIMAL	VALOR TRIMESTRAL DE IMPORTACIONES CON MES FINAL ABRIL 2022
	THREE_MONTHS_ENDED_APRIL_2023	DECIMAL	VALOR TRIMESTRAL DE IMPORTACIONES CON MES FINAL ABRIL 2023
	YEAR_ENDED_APRIL_2022	DECIMAL	VALOR ANUALES DE IMPORTACIONES CON MES FINAL ABRIL 2022
	YEAR_ENDED_APRIL_2023	DECIMAL	VALOR ANUALES DE IMPORTACIONES CON MES FINAL ABRIL 2023

Table - country_by_code

KEY FIELD	FIELD	TYPE	DETAILS
PK	ID	INT	NÚMERO ÚNICO QUE IDENTIFICA EL REGISTRO. PRIMARY KEY
FK	CODE	VARCHAR	CÓDIGO DE PAÍS
	NAME	VARCHAR	NOMBRE DEL PAÍS
	REGION	VARCHAR	REGIÓN A LA QUE PERTENECE EL PAÍS

Entity-Relationship Diagram - Set 2
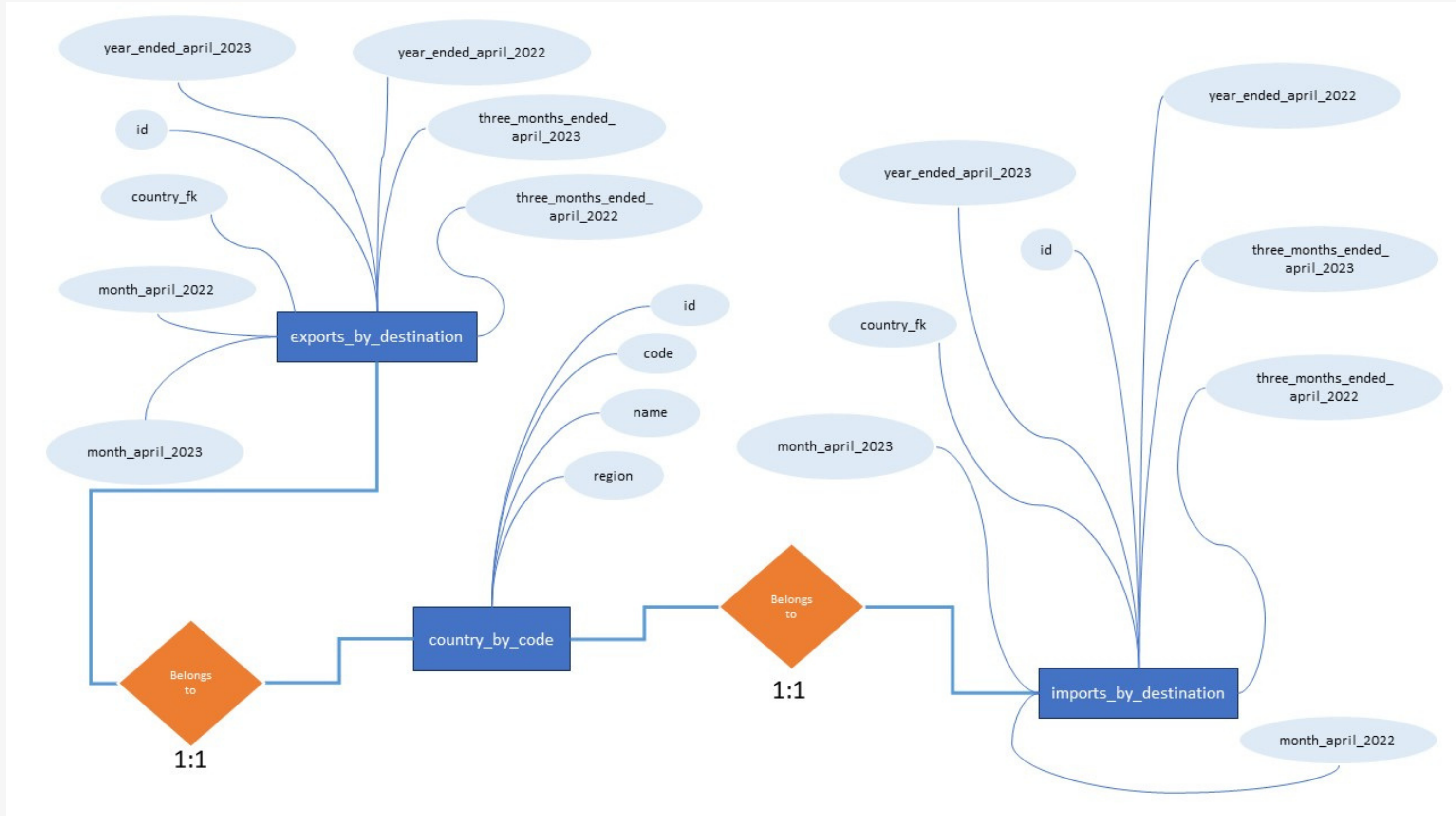
SET 3 - Tables

01 exports_by_sitc

Exports by SITC (Standard International Trade Classification)" refer to the breakdown of exported goods into different categories based on the internationally standardized classification system. It provides detailed information about the various categories of exported products.

02 imports_by_sitc

Incoming imports by SITC (Standard International Trade Classification)" refer to the breakdown of imported goods into different categories based on the internationally standardized classification system. It provides detailed information about the various categories of imported products

03 sitc

Contiene la clasificación SITC (Standard International Trade Classification) que es un sistema de categorización utilizado a nivel mundial para clasificar los bienes comerciados internacionalmente.

Table - exports_by_sitc

KEY FIELD	FIELD	TYPE	DETAILS
PK	ID	INT	NÚMERO ÚNICO QUE IDENTIFICA EL REGISTRO. PRIMARY KEY
FK	SITC_FK	INT	NÚMERO QUE IDENTIFICA AL PAIS QUE PERTENECE EL REGISTRO. FOREIGN KEY
	MONTH_APRIL_2022	DECIMAL	VALOR DE EXPORTACIONES DE ABRIL 2022
	MONTH_APRIL_2023	DECIMAL	VALOR DE EXPORTACIONESDE ABRIL 2023
	THREE_MONTHS_ENDED_APRIL_2022	DECIMAL	VALOR TRIMESTRAL DE EXPORTACIONES CON MES FINAL ABRIL 2022
	THREE_MONTHS_ENDED_APRIL_2023	DECIMAL	VALOR TRIMESTRAL DE EXPORTACIONES CON MES FINAL ABRIL 2023
	YEAR_ENDED_APRIL_2022	DECIMAL	VALOR ANUALES DE EXPORTACIONES CON MES FINAL ABRIL 2022
	YEAR_ENDED_APRIL_2023	DECIMAL	VALOR ANUALES DE EXPORTACIONES CON MES FINAL ABRIL 2023

Table - imports_by_sitc

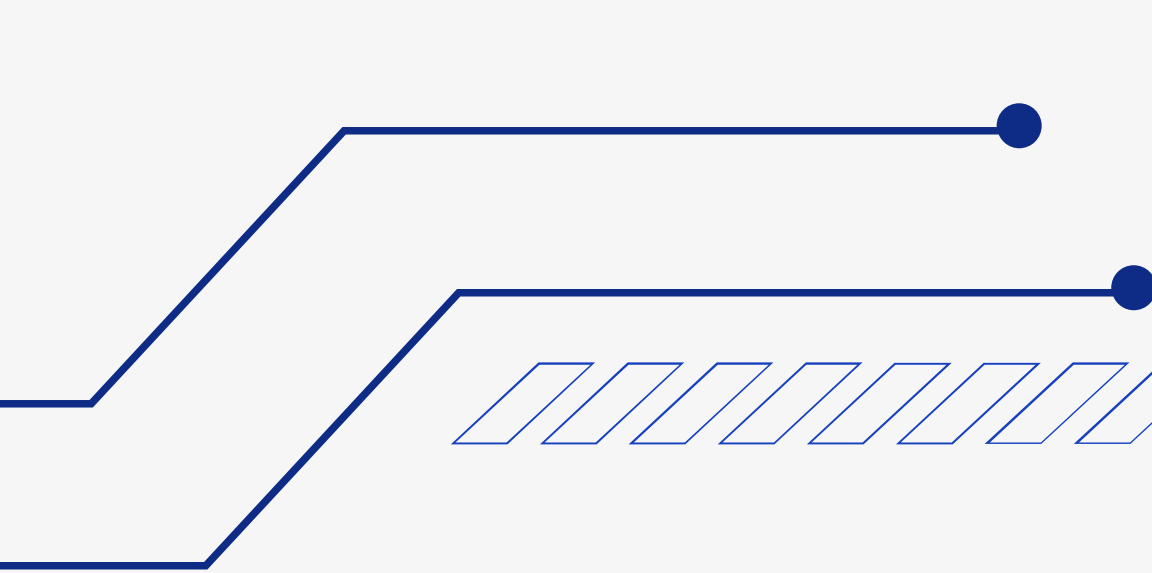| KEY FIELD	FIELD	TYPE	DETAILS
PK	ID	INT	NÚMERO ÚNICO QUE IDENTIFICA EL REGISTRO. PRIMARY KEY
FK	SITC_FK	INT	NÚMERO QUE IDENTIFICA AL PAIS QUE PERTENECE EL REGISTRO. FOREIGN KEY
	MONTH_APRIL_2022	DECIMAL	VALOR DE IMPORTACIONES DE ABRIL 2022
	MONTH_APRIL_2023	DECIMAL	VALOR DE IMPORTACIONES DE ABRIL 2023
	THREE_MONTHS_ENDED_APRIL_2022	DECIMAL	VALOR TRIMESTRAL DE IMPORTACIONES CON MES FINAL ABRIL 2022
	THREE_MONTHS_ENDED_APRIL_2023	DECIMAL	VALOR TRIMESTRAL DE IMPORTACIONES CON MES FINAL ABRIL 2023
	YEAR_ENDED_APRIL_2022	DECIMAL	VALOR ANUALES DE IMPORTACIONES CON MES FINAL ABRIL 2022
	YEAR_ENDED_APRIL_2023	DECIMAL	VALOR ANUALES DE IMPORTACIONES CON MES FINAL ABRIL 2023

Table - sitc

KEY FIELD	FIELD	TYPE	DETAILS
PK	SITC_CODE_PK	INT	NÚMERO ÚNICO QUE IDENTIFICA EL REGISTRO. PRIMARY KEY
	SECTION	VARCHAR	SECCIÓN POR RUBRO SITC
	CATEGORIES	VARCHAR	CATEGORIA POR RUBRO SITC

Entity-Relationship Diagram - Set 3
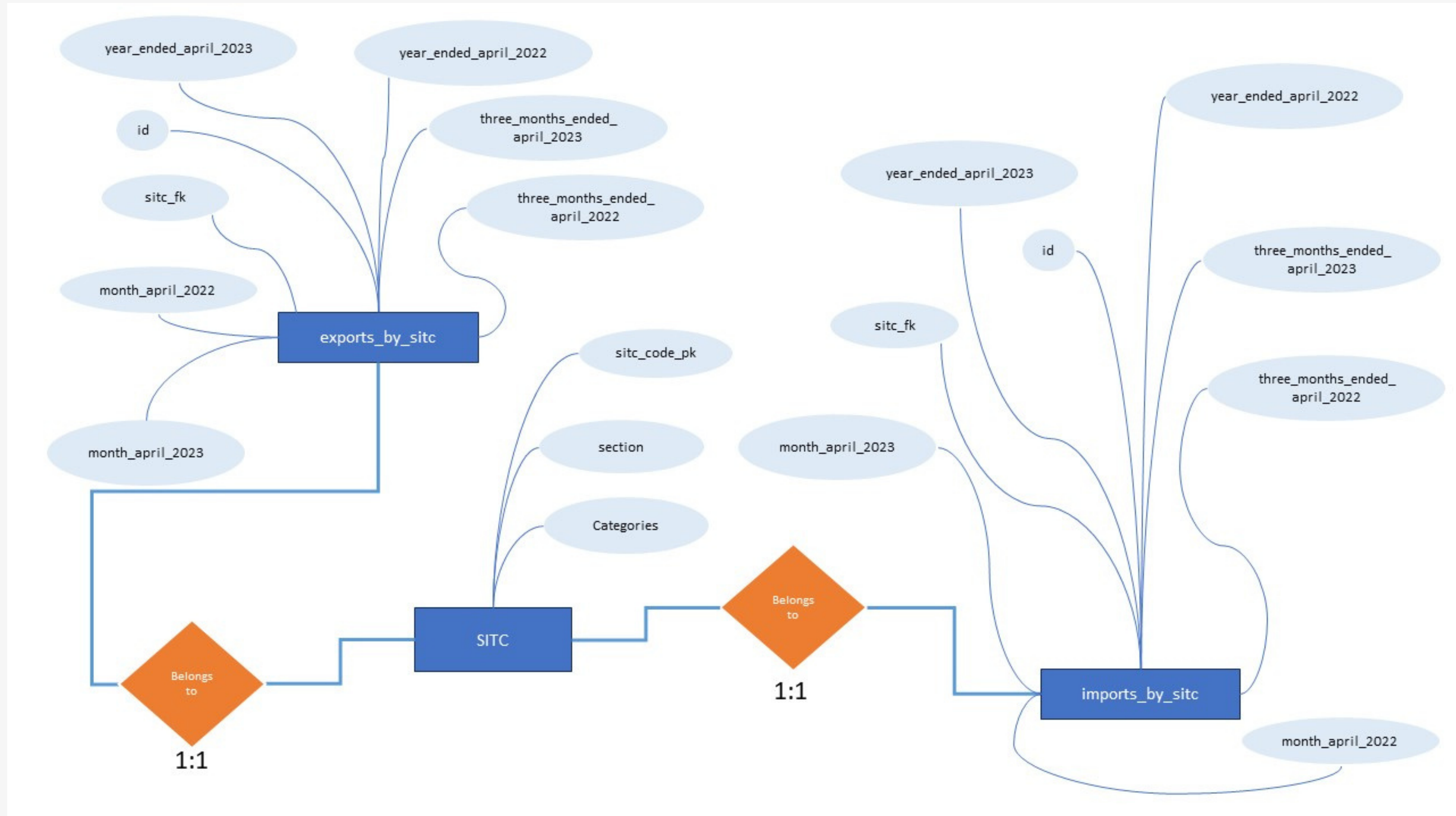
Visualization
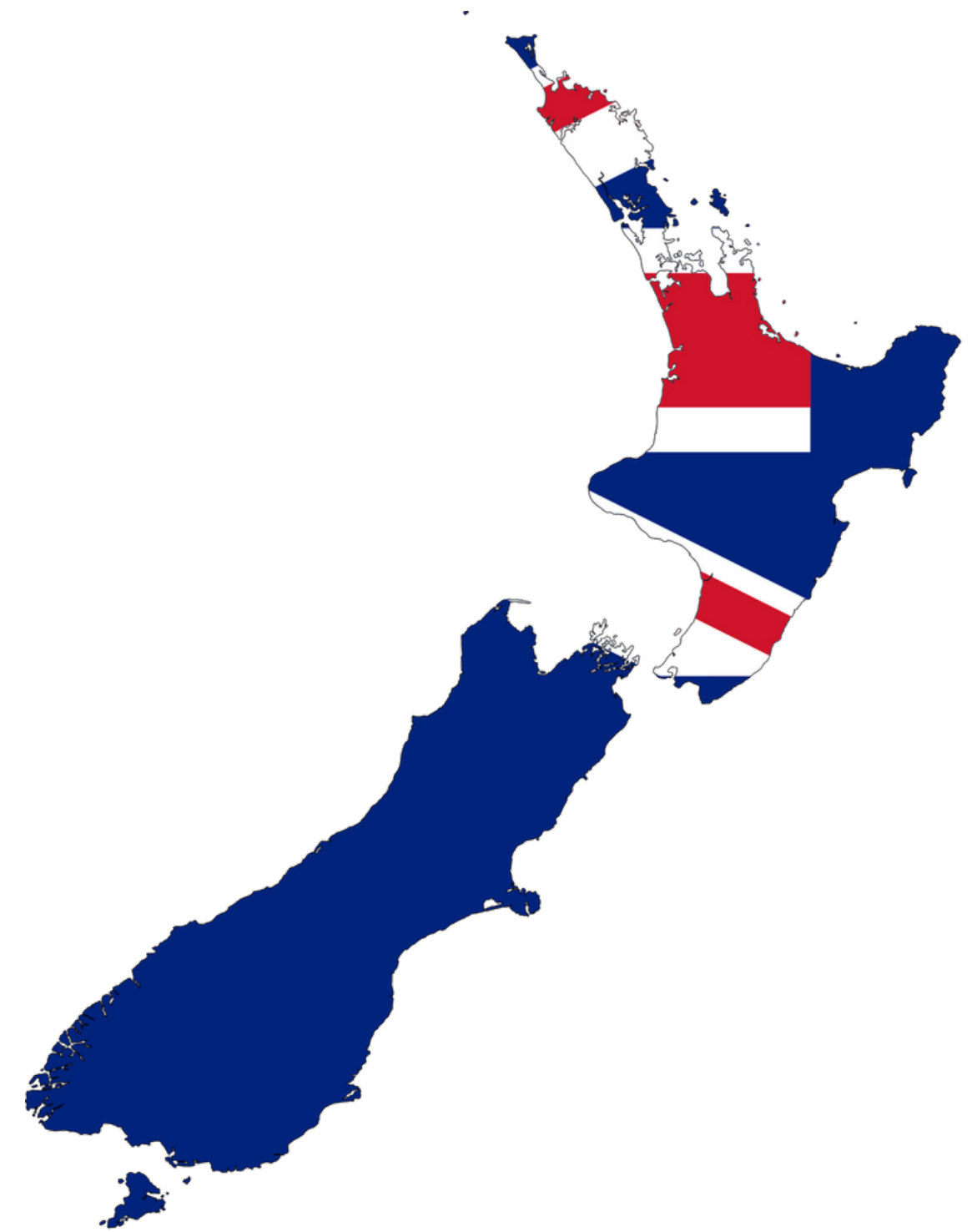
Calculated Measures $NZ

FIELD	DETAILS
EXP_APRIL23	EXP_APRIL23 = CONCATENATE(ROUND(LOOKUPVALUE(EXPORTS[EXPORTS_FOB], EXPORTS[PERIOD_FK], 25),0),"M")
APRIL23_EXP_CHANGE	LOOKUPVALUE(EXPORTS[CHANGE_PREV_YEAR], EXPORTS[PERIOD_FK], 25)/100
EXP_SEASON_APRIL23	CONCATENATE(ROUND(LOOKUPVALUE(EXPORTS[EXPORTS_SEASONALLY_ADJUSTED], EXPORTS[PERIOD_FK], 25),0), "M")
EXP_SEASON_APRIL23	CONCATENATE(ROUND(LOOKUPVALUE(EXPORTS[EXPORTS_TREND], EXPORTS[PERIOD_FK], 25),0),"M")
IMP_APRIL23	CONCATENATE(ROUND(LOOKUPVALUE(IMPORTS[IMPORTS_CIF], IMPORTS[PERIOD_FK], 25),0),"M")
APRIL23_IMP_CHANGE	LOOKUPVALUE(IMPORTS[CHANGE_PREV_YEAR], IMPORTS[PERIOD_FK], 25)/100
IMP_SEASON_APRIL23	CONCATENATE(ROUND(LOOKUPVALUE(IMPORTS[IMPORTS_SEASONALLY_ADJUSTED], IMPORTS[PERIOD_FK], 25),0),"M")
IMP_VFD_APRIL23	CONCATENATE(ROUND(LOOKUPVALUE(IMPORTS[IMPORTS_VFD], IMPORTS[PERIOD_FK], 25),0),"M")

Medidas Calculadas [SITC] en $NZ

| FIELD	DETAILS
SUM_EXPORTS_SITC	SUM_EXPORTS_SITC = SUM(EXPORTS_BY_SITC[MONTH_APRIL_2023])
SUM_IMPORTS_SITC	SUM_IMPORTS_SITC = SUM(IMPORTS_BY_SITC[MONTH_APRIL_2023])
SUM_3MEXPORTS_SITC	SUM_3MEXPORTS_SITC = SUM(EXPORTS_BY_SITC[THREE_MONTHS_ENDED_APRIL_2023])
SUM_3MIMPORTS_SITC	SUM_3MIMPORTS_SITC = SUM(IMPORTS_BY_SITC[THREE_MONTHS_ENDED_APRIL_2023])
SUM_1YEXPORTS_SITC	SUM_1YEXPORTS_SITC = SUM(EXPORTS_BY_SITC[YEAR_ENDED_APRIL_2023])
SUM_1YIMPORTS_SITC	SUM_1YIMPORTS_SITC = SUM(IMPORTS_BY_SITC[YEAR_ENDED_APRIL_2023])

Medidas Calculadas $US

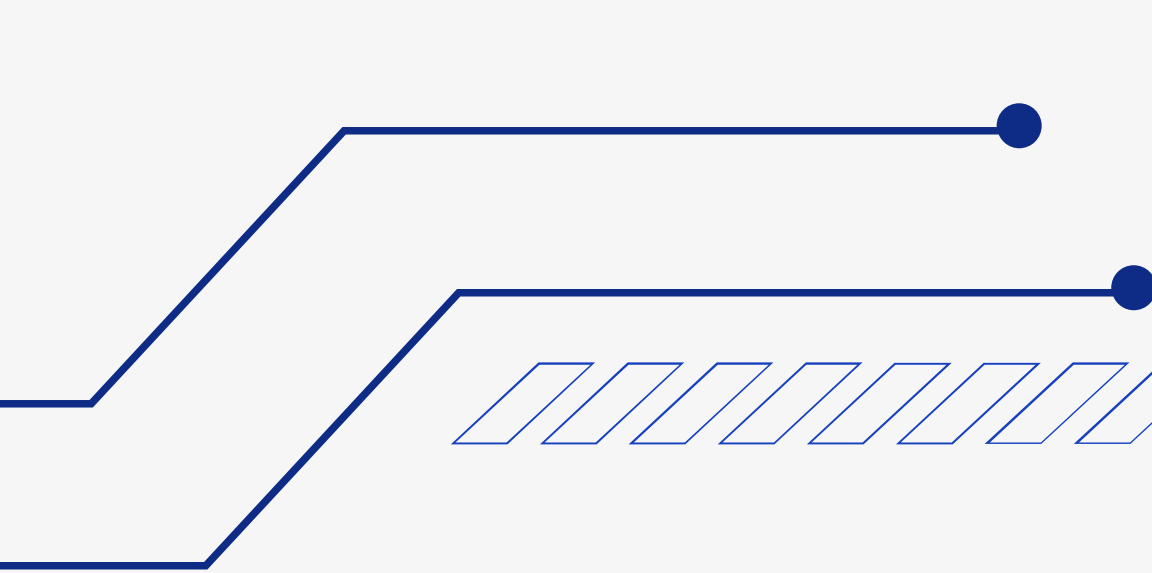| FIELD	DETAILS
EXP_US_APRIL2023	EXP_US_APRIL2023 = CONCATENATE(ROUND(LOOKUPVALUE(EXPORTS[EXPORT_NZ:US], EXPORTS[PERIOD_FK], 25),0),"M")
EXP_SEASON_US_APRIL23	EXP_SEASON_US_APRIL23 = CONCATENATE(ROUND(LOOKUPVALUE(EXCHANGE_RATE[EXPORTS_SEASONAL_NZ:US], EXCHANGE_RATE[PERIOD_FK], 25),0), "M")
EXP_TREND_US_APRIL23	EXP_TREND_US_APRIL23 = CONCATENATE(ROUND(LOOKUPVALUE(EXCHANGE_RATE[EXPORTS_TREND_NZ:US], EXCHANGE_RATE[PERIOD_FK], 25),0), "M")
IMP_US_APRIL23	IMP_US_APRIL23 = CONCATENATE(ROUND(LOOKUPVALUE(IMPORTS[IMPORTS_CIF], IMPORTS[PERIOD_FK], 25)*LOOKUPVALUE(EXCHANGE_RATE[NZ$:US$], EXCHANGE_RATE[PERIOD_FK], 25),0),"M")
IMP_SEASON_US_APRIL23	IMP_SEASON_US_APRIL23 = CONCATENATE(ROUND(LOOKUPVALUE(IMPORTS[IMPORTS_SEASONALLY_ADJUSTED], IMPORTS[PERIOD_FK], 25)*LOOKUPVALUE(EXCHANGE_RATE[NZ$:US$], EXCHANGE_RATE[PERIOD_FK], 25),0),"M")
IMP_US_VFD_APRIL23	IMP_US_VFD_APRIL23 = CONCATENATE(ROUND(LOOKUPVALUE(IMPORTS[IMPORTS_VFD], IMPORTS[PERIOD_FK], 25)*LOOKUPVALUE(EXCHANGE_RATE[NZ$:US$], EXCHANGE_RATE[PERIOD_FK], 25),0),"M")

Medidas Calculadas [SITC] $US

FIELD	DETAILS
SUM_USEXPORTS_SITC	SUM_USEXPORTS_SITC = SUM(EXPORTS_BY_SITC[MONTH$US_APRIL_2023])
SUM_USIMPORTS_SITC	SUM_USIMPORTS_SITC = SUM(IMPORTS_BY_SITC[MONTH_APRIL_2023])*LOOKUPVALUE(EXCHANGE_RATE[EXPORTS_NZ:US],EXCHANGE_RATE[PERIOD_FK],25)
SUM_3MUSEXPORTS_SITC	SUM_3MUSEXPORTS_SITC = SUM(EXPORTS_BY_SITC[THREE_MONTH$US_APRIL_2023])
SUM_3MUSIMPORTS_SITC	SUM_3MUSIMPORTS_SITC = SUM(IMPORTS_BY_SITC[THREE_MONTHS_ENDED_APRIL_2022])*LOOKUPVALUE(EXCHANGE_RATE[EXPORTS_NZ:US],EXCHANGE_RATE[PERIOD_FK],25)
SUM_YUSEXPORTS_SITC	SUM_YUSEXPORTS_SITC = SUM(EXPORTS_BY_SITC[YEAR$US_APRIL_2023])
SUM_1YUSIMPORTS_SITC	SUM_1YUSIMPORTS_SITC = SUM(IMPORTS_BY_SITC[YEAR_ENDED_APRIL_2023])*LOOKUPVALUE(EXCHANGE_RATE[EXPORTS_NZ:US],EXCHANGE_RATE[PERIOD_FK],25)
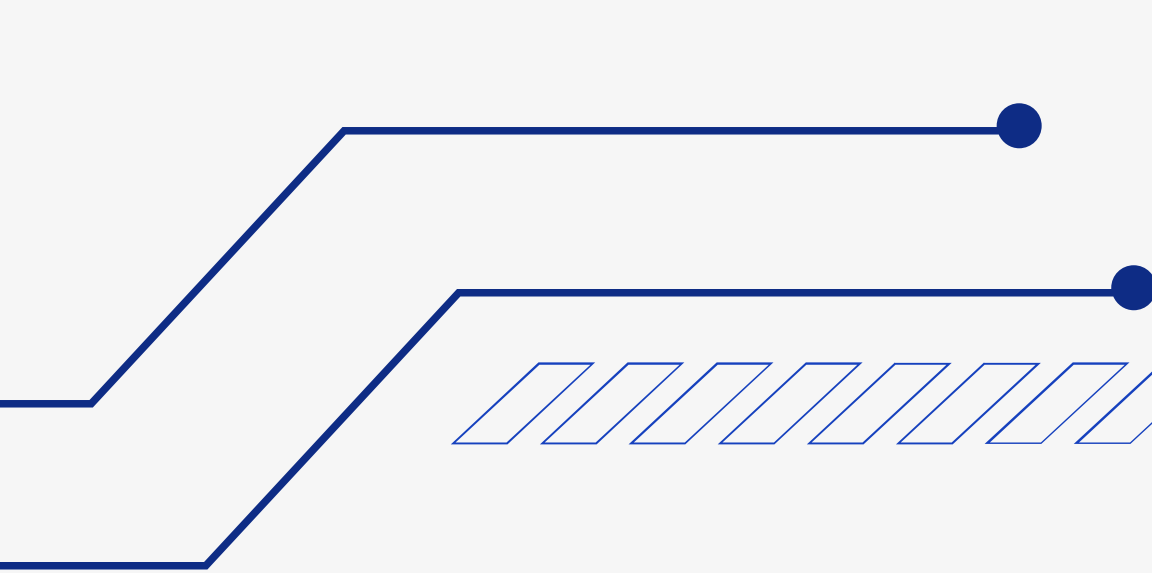
Columns Added

TABLE	NAME	DETAILS
EXCHANGE_RATE	EXPORTS_NZ:US	EXPORTS_NZ:US = RELATED(EXPORTS[EXPORTS_FOB])*EXCHANGE_RATE[NZ$:US$]
EXCHANGE_RATE	EXPORTS_SEASONAL_NZ:US	EXPORTS_SEASONAL_NZ:US = ROUND(RELATED(EXPORTS[EXPORTS_SEASONALLY_ADJUSTED])*EXCHANGE_RATE[NZ$:US$],0)
EXCHANGE_RATE	EXPORTS_TREND_NZ:US	EXPORTS_TREND_NZ:US
EXCHANGE_RATE	IMPORTS_NZ:US	IMPORTS_NZ:US = RELATED(IMPORTS[IMPORTS_CIF])*EXCHANGE_RATE[NZ$:US$]
EXPORTS	EXPORT_NZ:US	EXPORT_NZ:US = RELATED(EXCHANGE_RATE[EXPORTS_NZ:US])
EXPORTS_BY_DESTINATION	EXPORT$US22_BY_DESTINATION	EXPORT$US22_BY_DESTINATION = ROUND(LOOKUPVALUE(EXCHANGE_RATE[EXPORTS_NZ:US], EXCHANGE_RATE[PERIOD_FK], 25)*EXPORTS_BY_DESTINATION[MONTH_APRIL_2022],0)
EXPORTS_BY_DESTINATION	EXPORT$US23_BY_DESTINATION	EXPORT$US23_BY_DESTINATION = ROUND(LOOKUPVALUE(EXCHANGE_RATE[EXPORTS_NZ:US], EXCHANGE_RATE[PERIOD_FK], 25)*EXPORTS_BY_DESTINATION[MONTH_APRIL_2023],0)

Columns Added

TABLE	NAME	DETAILS
EXPORTS_BY_DESTINATION	COUNTRY	COUNTRY = RELATED(COUNTRY_CODE[NAME])
EXPORTS_BY_SITC	MONTH$US_APRIL_2023	MONTH$US_APRIL_2023 = ROUND(EXPORTS_BY_SITC[MONTH_APRIL_2023]*(LOOKUPVALUE(EXCHANGE_RATE[NZ$:US$], EXCHANGE_RATE[PERIOD_FK], 25)),0)
EXPORTS_BY_SITC	THREE_MONTH$US_APRIL_2023	THREE_MONTH$US_APRIL_2023 = ROUND(EXPORTS_BY_SITC[THREE_MONTHS_ENDED_APRIL_2023]*(LOOKUPVALUE(EXCHANGE_RATE[NZ$:US$], EXCHANGE_RATE[PERIOD_FK], 25)),0)
EXPORTS_BY_SITC	YEAR$US_APRIL_2023	YEAR$US_APRIL_2023 = ROUND(EXPORTS_BY_SITC[YEAR_ENDED_APRIL_2023]*(LOOKUPVALUE(EXCHANGE_RATE[NZ$:US$], EXCHANGE_RATE[PERIOD_FK], 25)),0)
IMPORTS_BY_COUNTRY	IMPORT$US22_BY_DESTINATION	IMPORT$US22_BY_DESTINATION = ROUND(LOOKUPVALUE(EXCHANGE_RATE[EXPORTS_NZ:US], EXCHANGE_RATE[PERIOD_FK], 25)*IMPORTS_BY_COUNTRY[MONTH_APRIL_2022],0)
IMPORTS_BY_COUNTRY	IMPORT$US23_BY_DESTINATION	IMPORT$US23_BY_DESTINATION = LOOKUPVALUE(EXCHANGE_RATE[EXPORTS_NZ:US], EXCHANGE_RATE[PERIOD_FK], 25)*IMPORTS_BY_COUNTRY[MONTH_APRIL_2023]
IMPORTS_BY_COUNTRY	COUNTRY	COUNTRY = RELATED(COUNTRY_CODE[NAME])

Parameters Created

NAME	DETAILS

EXPORTNZ[SITC]	[EXPORTNZ[SITC]]] = {
	  ("EXP[SITC]-ABRIL23", NAMEOF('MEASURES_TABLE'[SUM_EXPORTS_SITC]), 0),
	  ("EXP[SITC]-ULTIMOS3MESES", NAMEOF('MEASURES_TABLE'[SUM_3MEXPORTS_SITC]), 2),
	  ("EXP[SITC]-ULTIMOAÑO", NAMEOF('MEASURES_TABLE'[SUM_1YEXPORTS_SITC]), 1)
	}

EXPORTUS[SITC]	[EXPORTUS[SITC]]] = {
	  ("EXP[SITC]-ABRIL23", NAMEOF('MEASURES_TABLE'[SUM_USEXPORTS_SITC]), 0),
	  ("EXP[SITC]-ULTIMOS3MESES", NAMEOF('MEASURES_TABLE'[SUM_3MUSEXPORTS_SITC]), 1),
	  ("EXP[SITC]-ULTIMOAÑO", NAMEOF('MEASURES_TABLE'[SUM_YUSEXPORTS_SITC]), 2)
	}

IMPORTNZ[SITC]	[IMPORTNZ[SITC]]] = {
	  ("IMP[SITC]-ABRIL23", NAMEOF('MEASURES_TABLE'[SUM_IMPORTS_SITC]), 0),
	  ("IMP[SITC]-ULTIMOS3MESES", NAMEOF('MEASURES_TABLE'[SUM_3MIMPORTS_SITC]), 1),
	  ("IMP[SITC]-ULTIMOAÑO", NAMEOF('MEASURES_TABLE'[SUM_1YIMPORTS_SITC]), 2)
	}

IMPORTUS[SITC]	[IMPORTUS[SITC]]] = {
	  ("IMP[SITC]-ABRIL23", NAMEOF('MEASURES_TABLE'[SUM_USIMPORTS_SITC]), 0),
	  ("IMP[SITC]-ULTIMOS3MESES", NAMEOF('MEASURES_TABLE'[SUM_3MUSIMPORTS_SITC]), 1),
	  ("IMP[SITC]-ULTIMOAÑO", NAMEOF('MEASURES_TABLE'[SUM_1YUSIMPORTS_SITC]), 2)
	}