# Who Gains Most from Trade?

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# Who gains most from trade?

- Ever since David Ricardo, it has been well understood that under perfect competition free international trade is beneficial to all participating nations
- Nonetheless, some countries might benefit more than others, and the benefits might change over time
- This is all the more so that the terms of trade and real exchange rates vary over time, benefiting some nations and hurting others

# Terms-of-trade changes

- A bettering of the terms of trade amounts to a windfall gain for the country as a whole and it implies an increase in its real value added and real income
- This phenomenon is similar to a technological progress
- Contrary to a technological progress, however, a change in the terms of trade is treated by the national accounts as a price phenomenon, rather than as a real effect
- Consequently, the beneficial effect of an improvement in the terms of trade is not taken into account by real gross domestic product (GDP)

# Real-exchange-rate changes

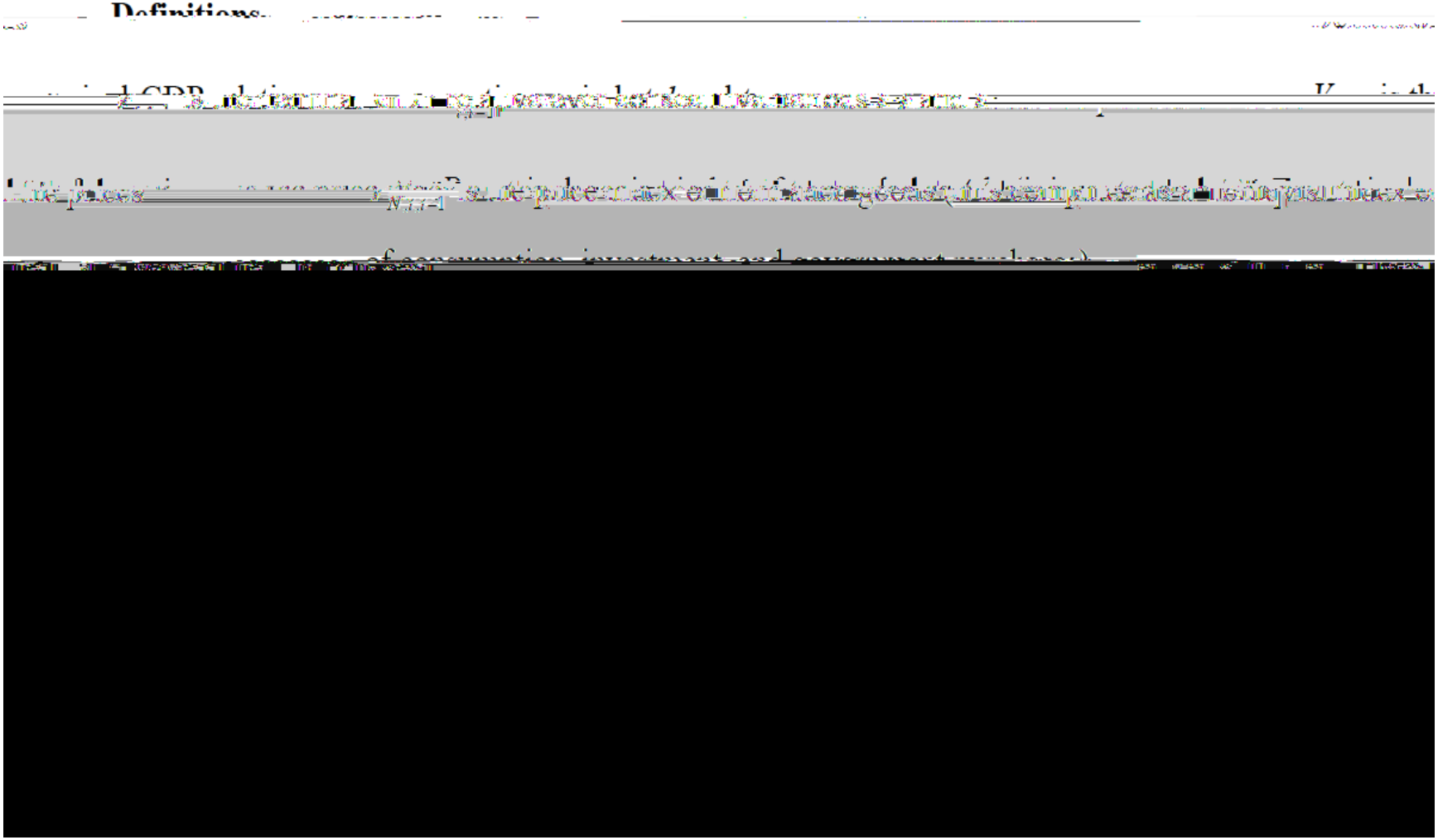
- Similarly, a real appreciation or depreciation of the currency amounts to a change in relative prices that impacts on a country's welfare, unless trade happens to be balanced
- A surplus country benefits from a real depreciation of its currency, whereas a deficit country gets hurt by it
- Real GDP does not take this effect into account either

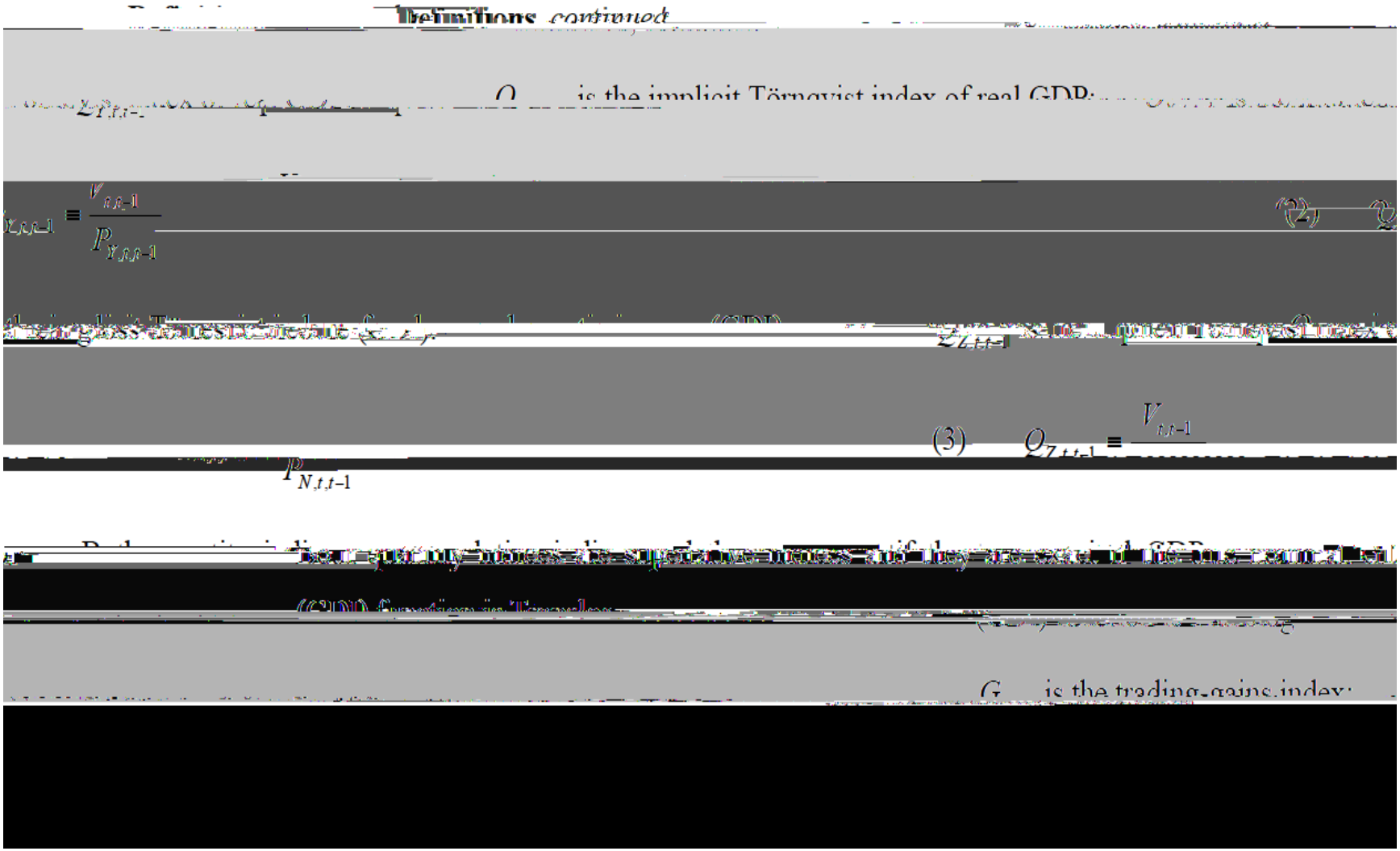
# Trading gains

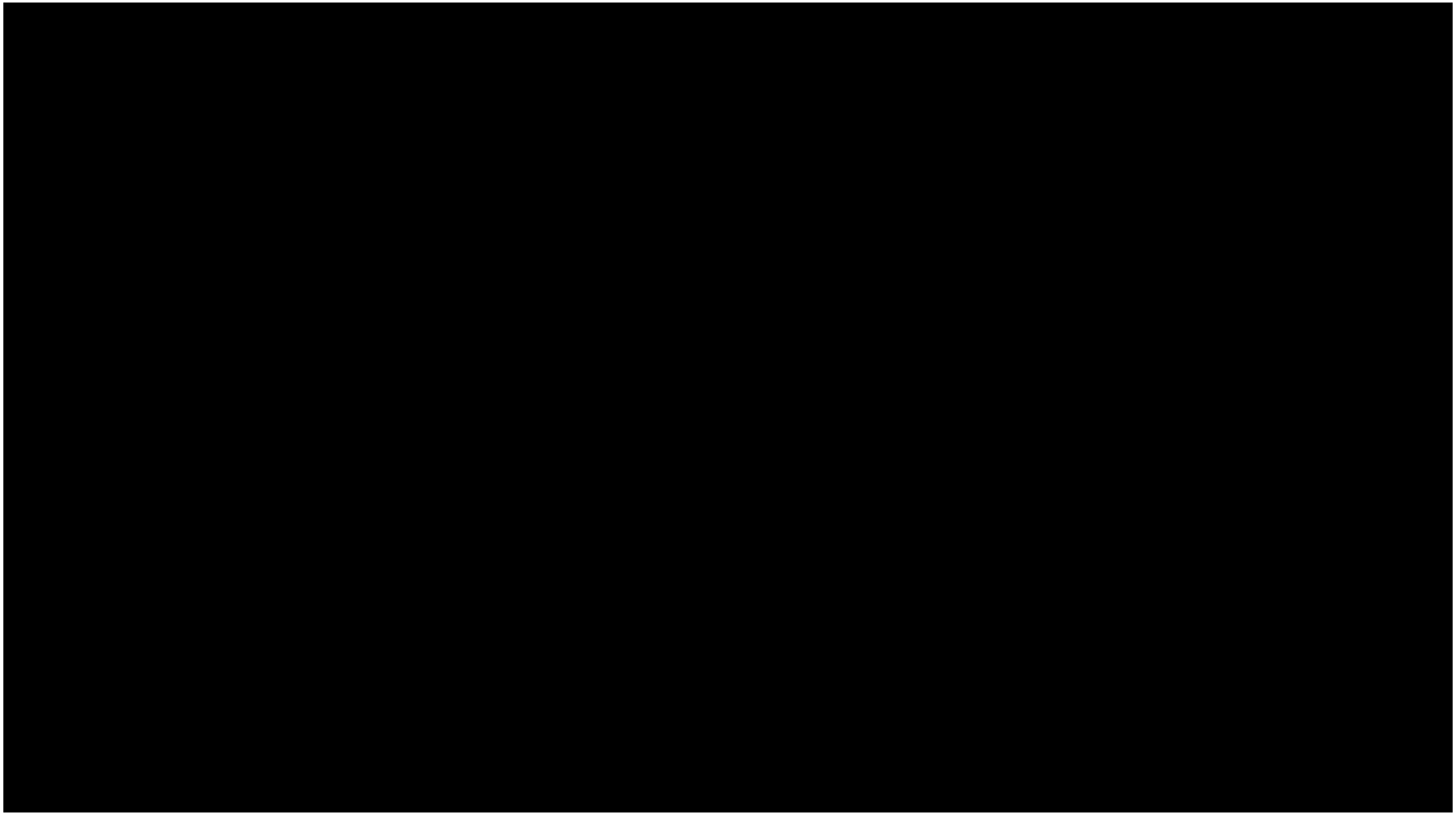
- The terms-of-trade effect and the real-exchange-rate effect together form what is known as the trading gains
- The trading gains essentially capture the difference between real gross domestic income (GDI) and real GDP
- The purpose of this paper is to find out who has experienced the largest trading gains – in relative and in absolute terms – over the past four decades

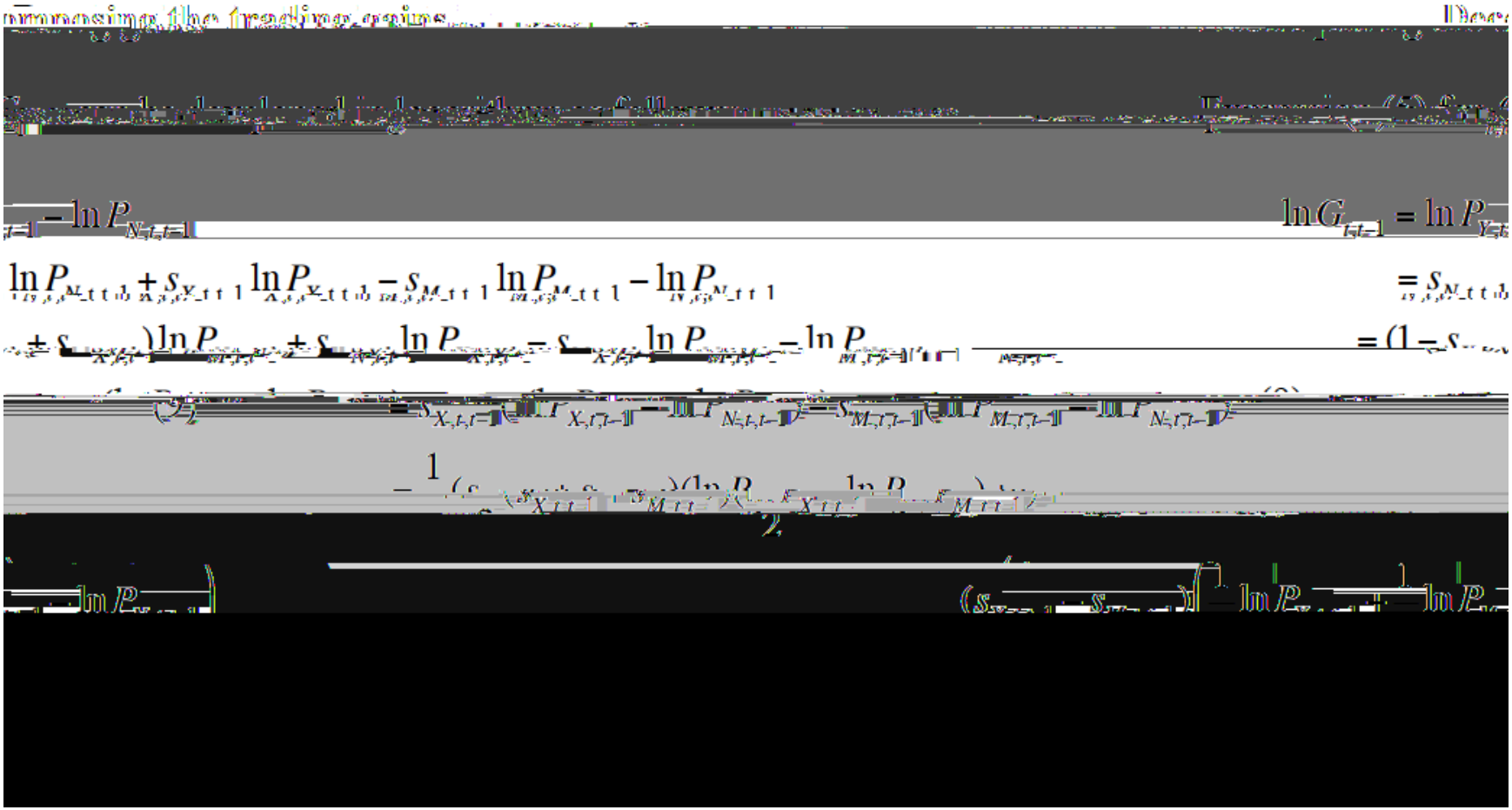
# The GDP function approach to the determination of imports and exports

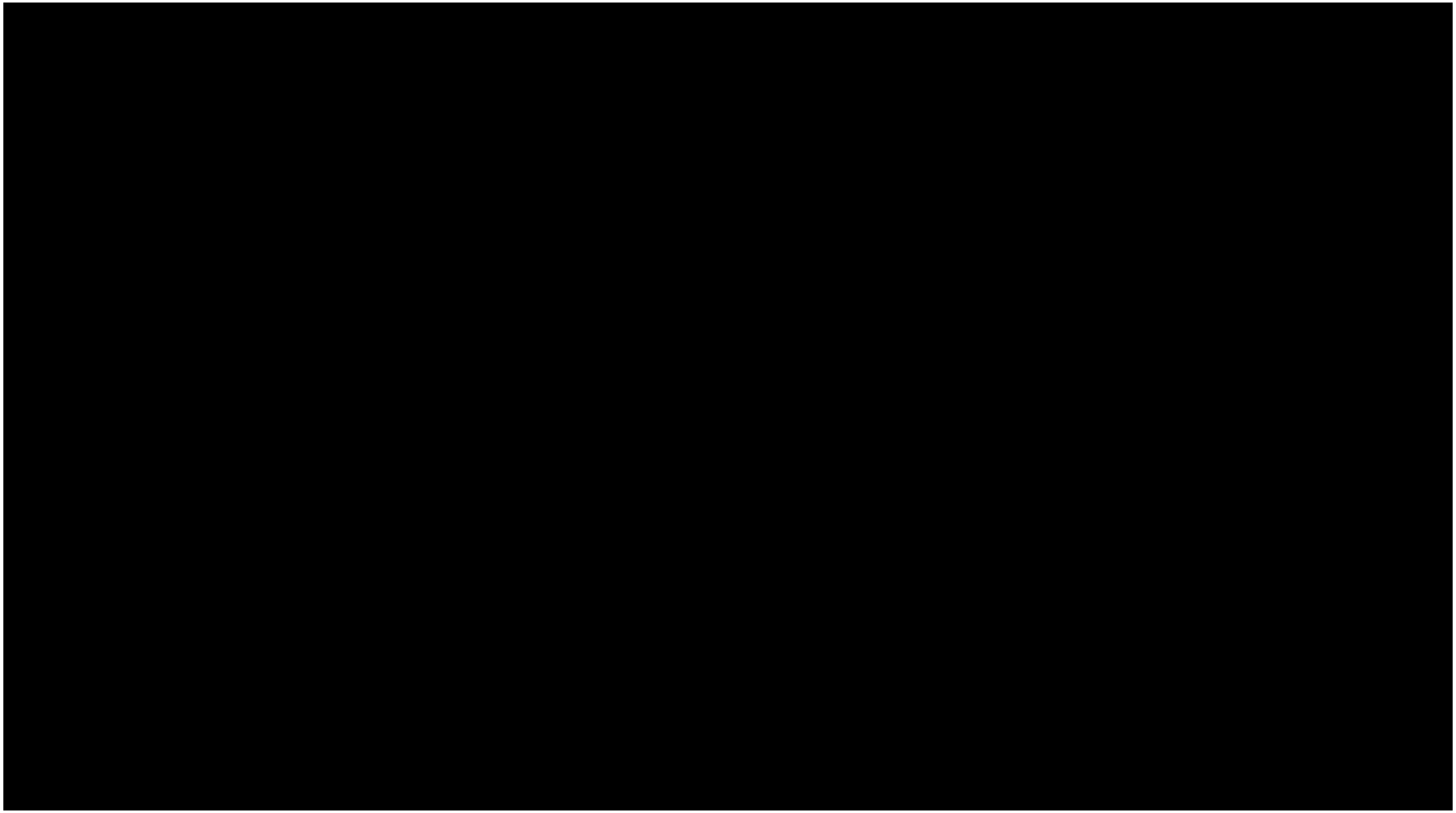
- Traded goods are viewed as middle products, with imports as an input to the technology and exports as an output
- Imports are not ready to meet final demand
- They must still be combined with domestic labour and capital services; a significant proportion of their final price tag is therefore accounted for by domestic value added
- Similarly, exports must still undergo a number of changes in the foreign country; they are therefore conceptually different from products intended for the home market
- These can therefore be treated as nontraded goods




Definitions continued
$Q_{Y,t,t-1}$ is the implicit Törnqvist index of real GDP:
$Q_{Y,t,t-1} \equiv \frac{V_{t,t-1}}{P_{Y,t,t-1}}$
(2)
$Q_{Z,t,t-1}$
$Q_{Z,t,t-1} \equiv \frac{V_{t,t-1}}{P_{N,t,t-1}}$
(3)
$G_{t,t-1}$ is the trading-gains index:







# Trading gains and losses

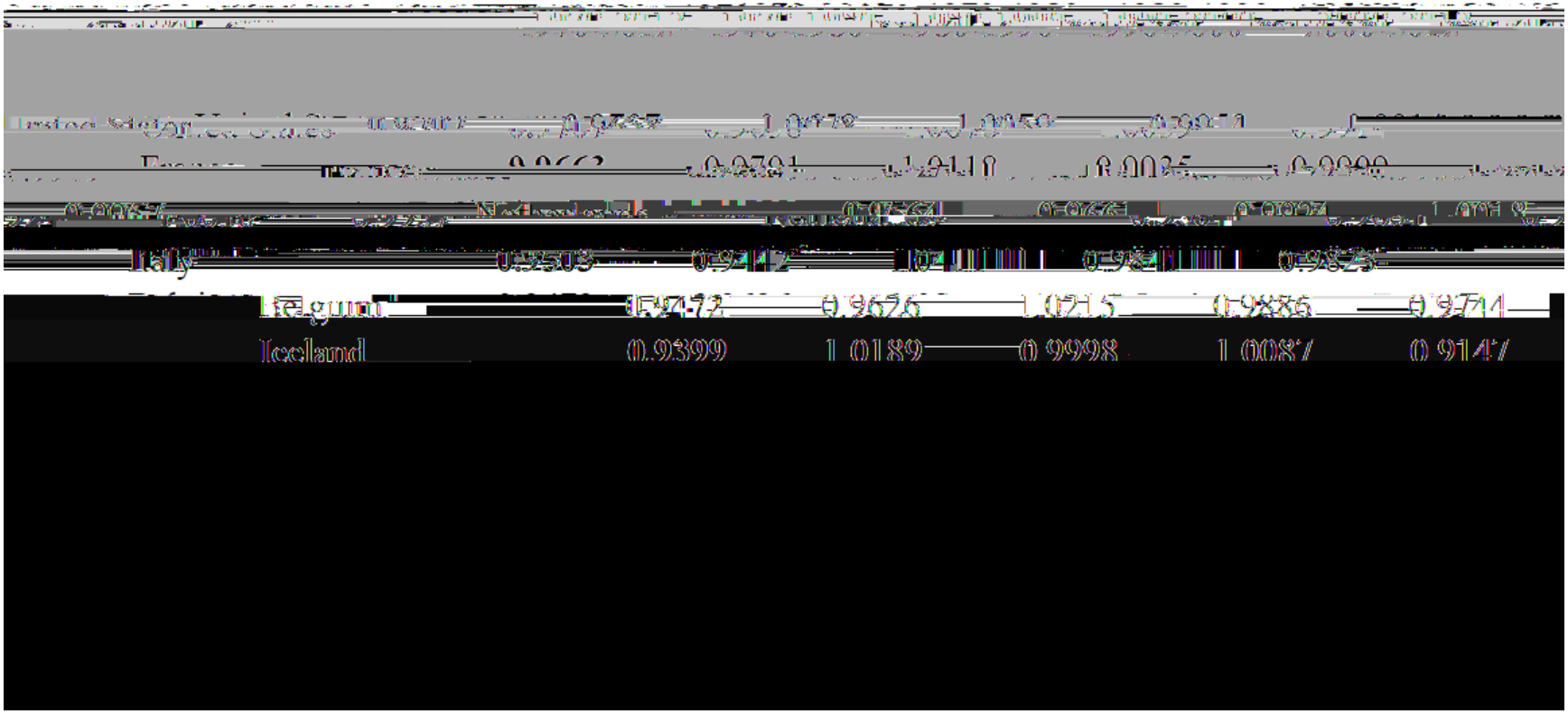
- The trading gains index over the 1970-2012 period is largest for Australia, Norway, and Switzerland
- … and lowest for Korea, Ireland, and Japan
- The trading gains varied a great deal over time, however

**Table 1**
**Trading Gains, 1970-2012**

| | 1970-2012 | 1970-1980 | 1980-1990 | 1990-2000 | 2000-2012 |
|---|---|---|---|---|---|
| Switzerland | 1.0697 | 0.9987 | 1.0452 | 1.0123 | |
| Portugal | 1.0600 | 0.9515 | 1.0458 | 1.0522 | |

Table 1 *continued*

Trading Gains, 1970–2012

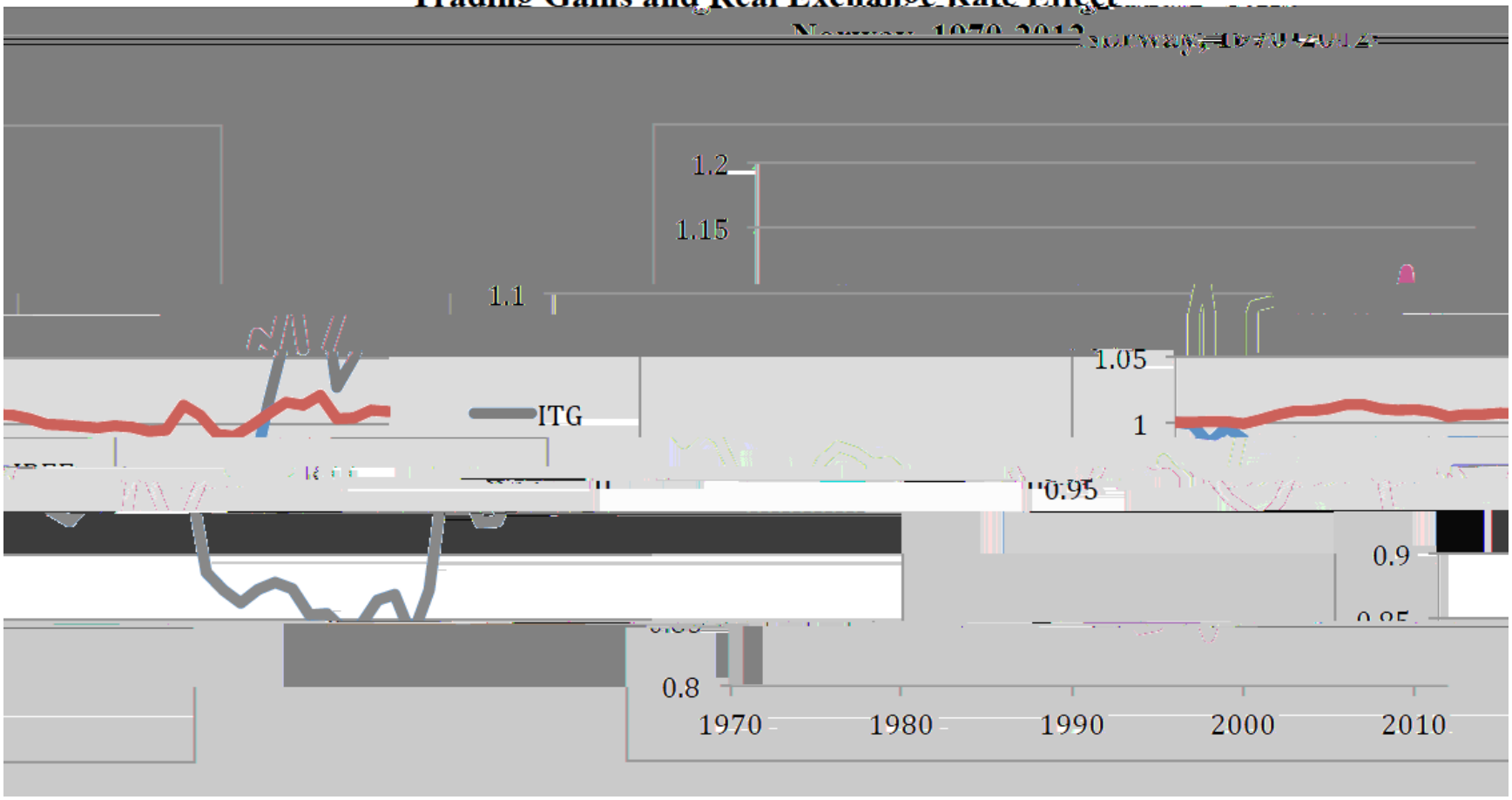


| | | | | | |
|---|---|---|---|---|---|
| Iceland | 0.9399 | 1.0189 | 0.9998 | 1.0087 | 0.9147 |

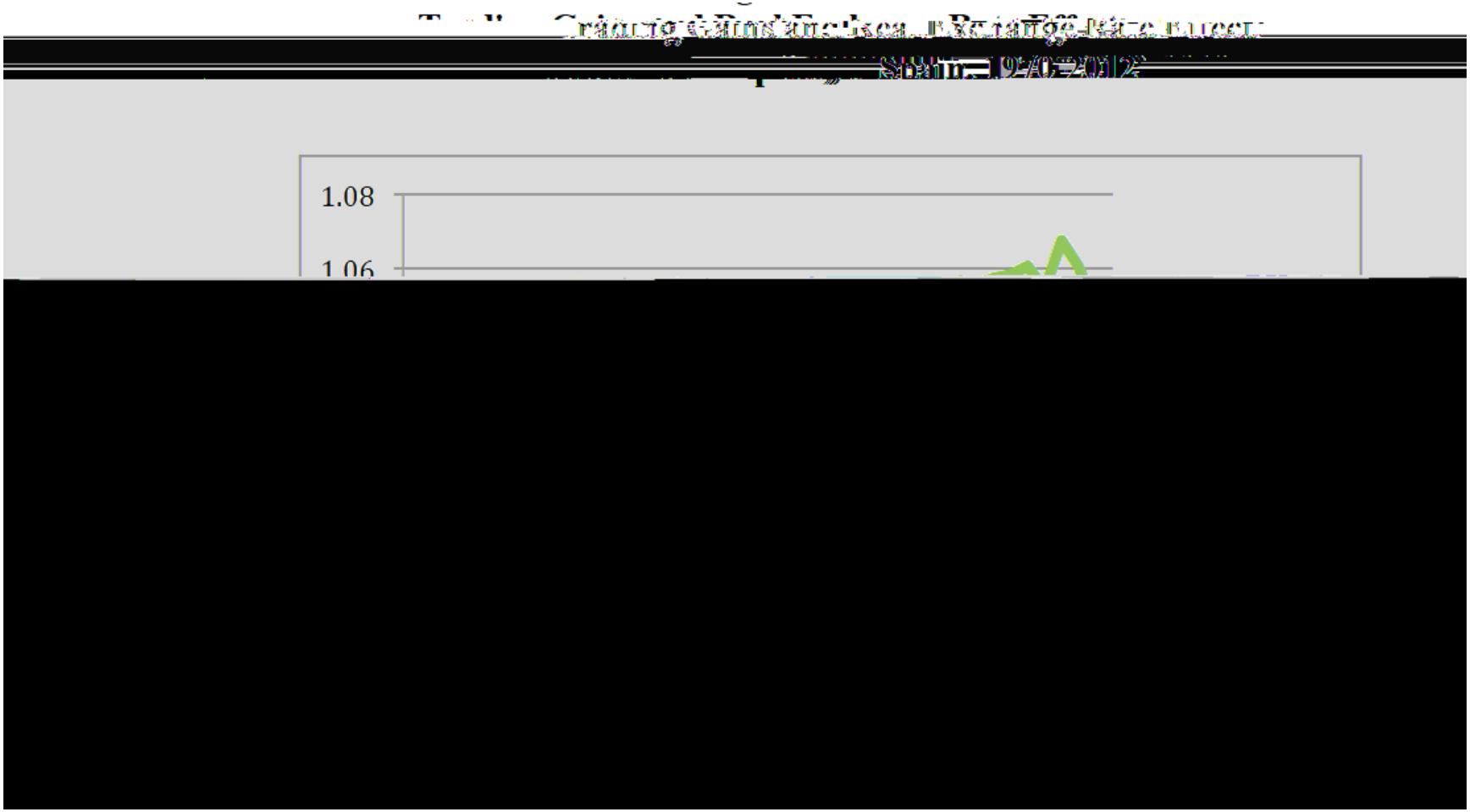
# Real-exchange-rate and terms-of-trade effects

- The real-exchange-rate effect is found to be

## Trading Gains and Real Exchange Rate Effect




1.1
1.06
1.02
1
0.98
0.96


1.08
1.06

## Trading Gains and Real Exchange Rate Effect

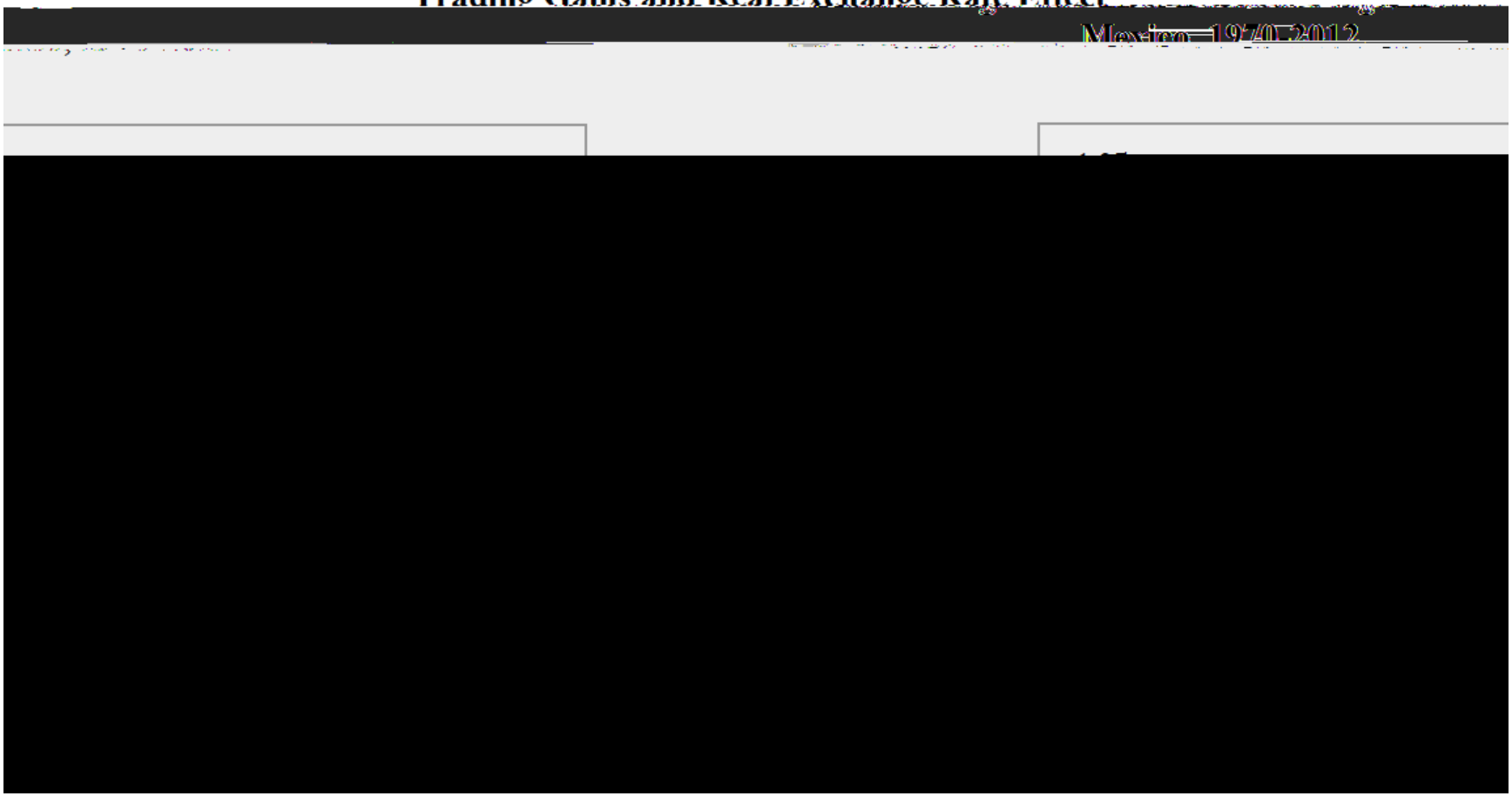
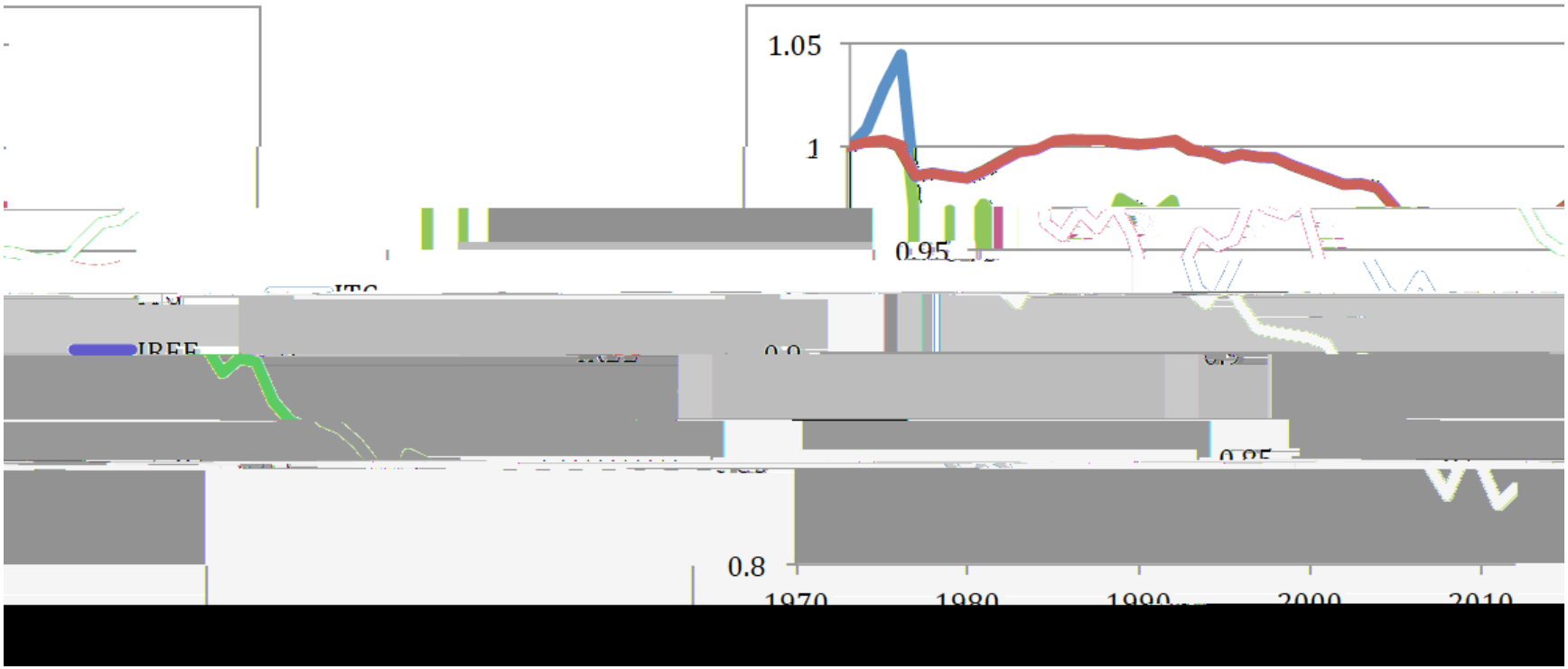
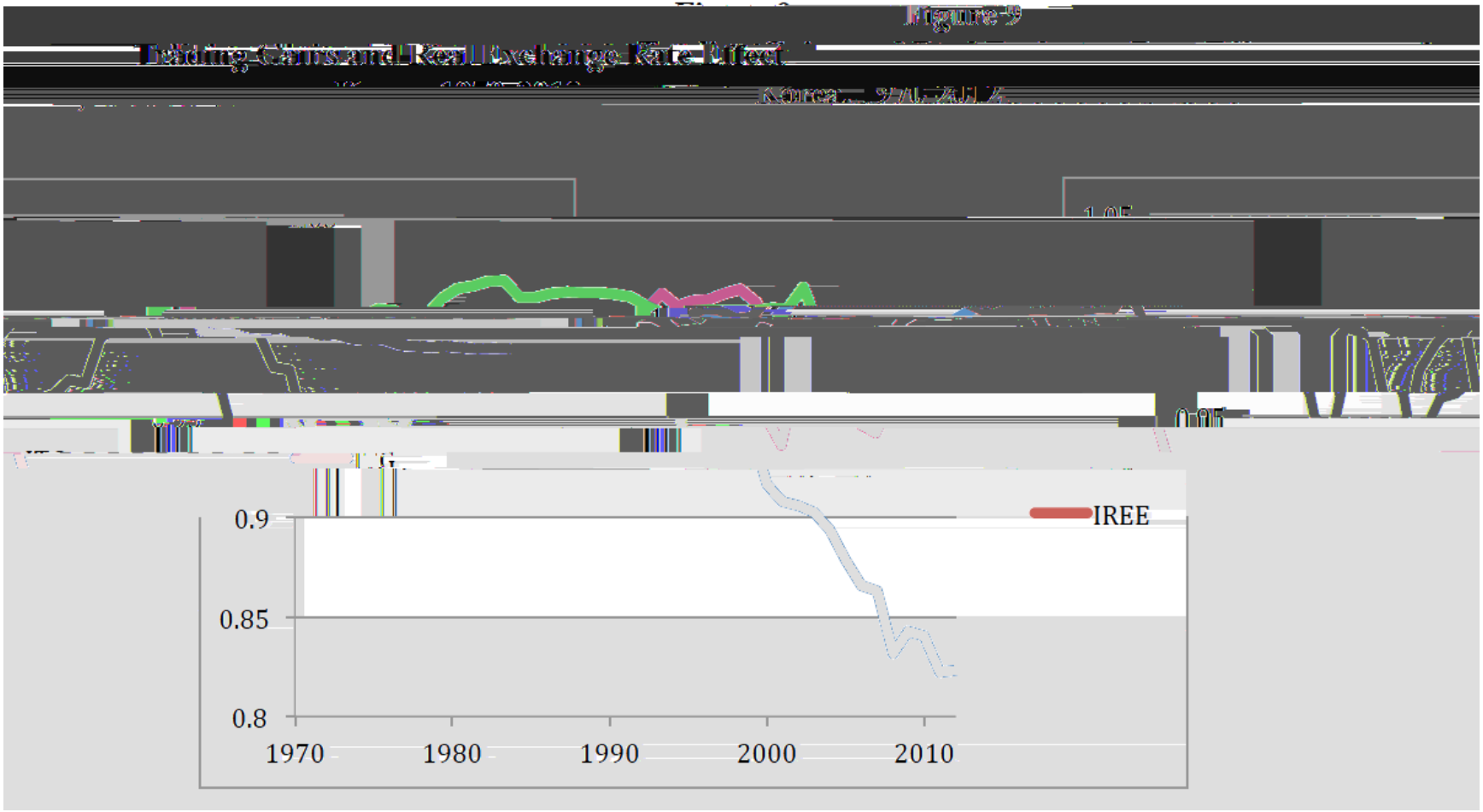


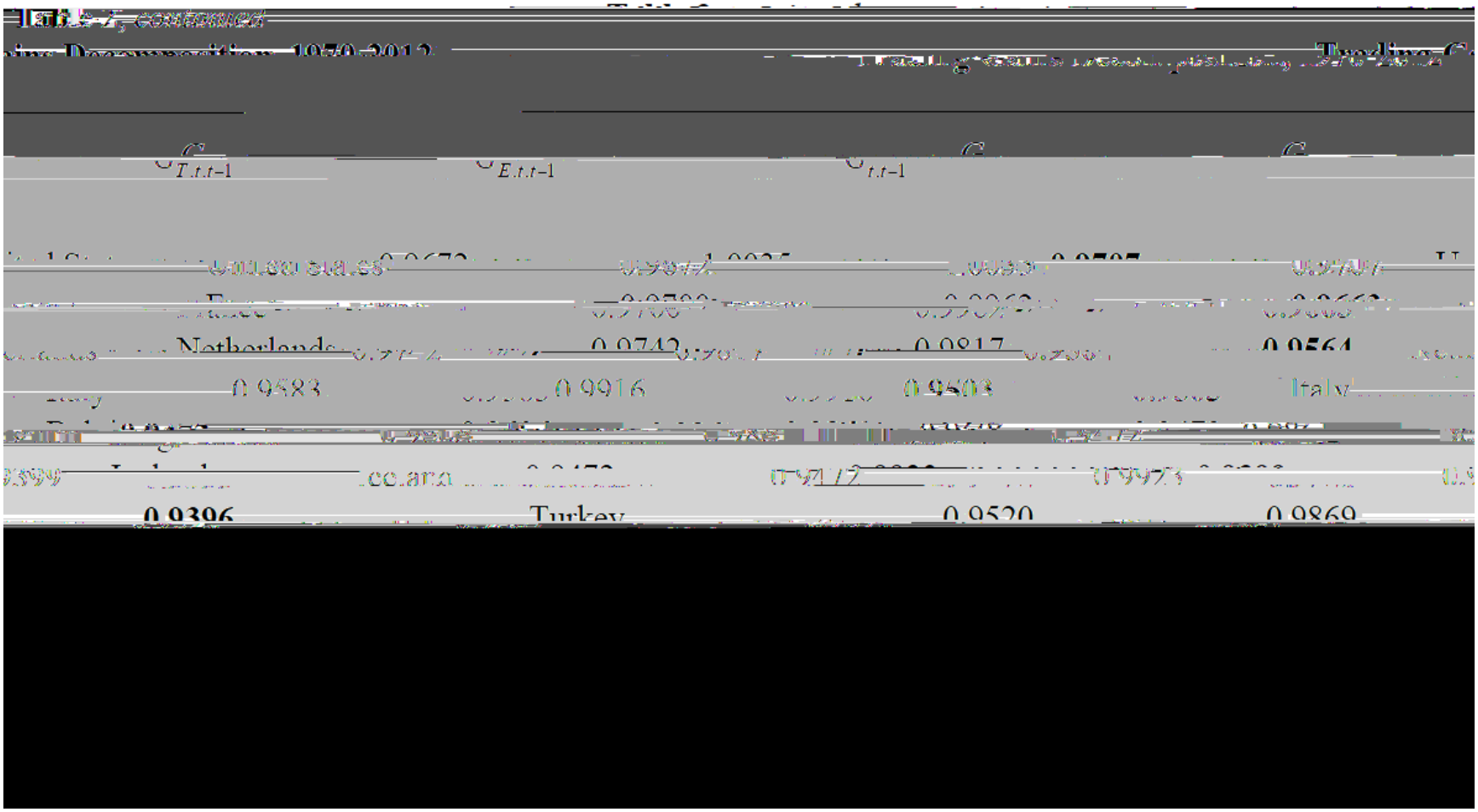
**Figure 7**

**Trading Gains and Real Exchange Rate Effects**

**Japan, 1970-2012**

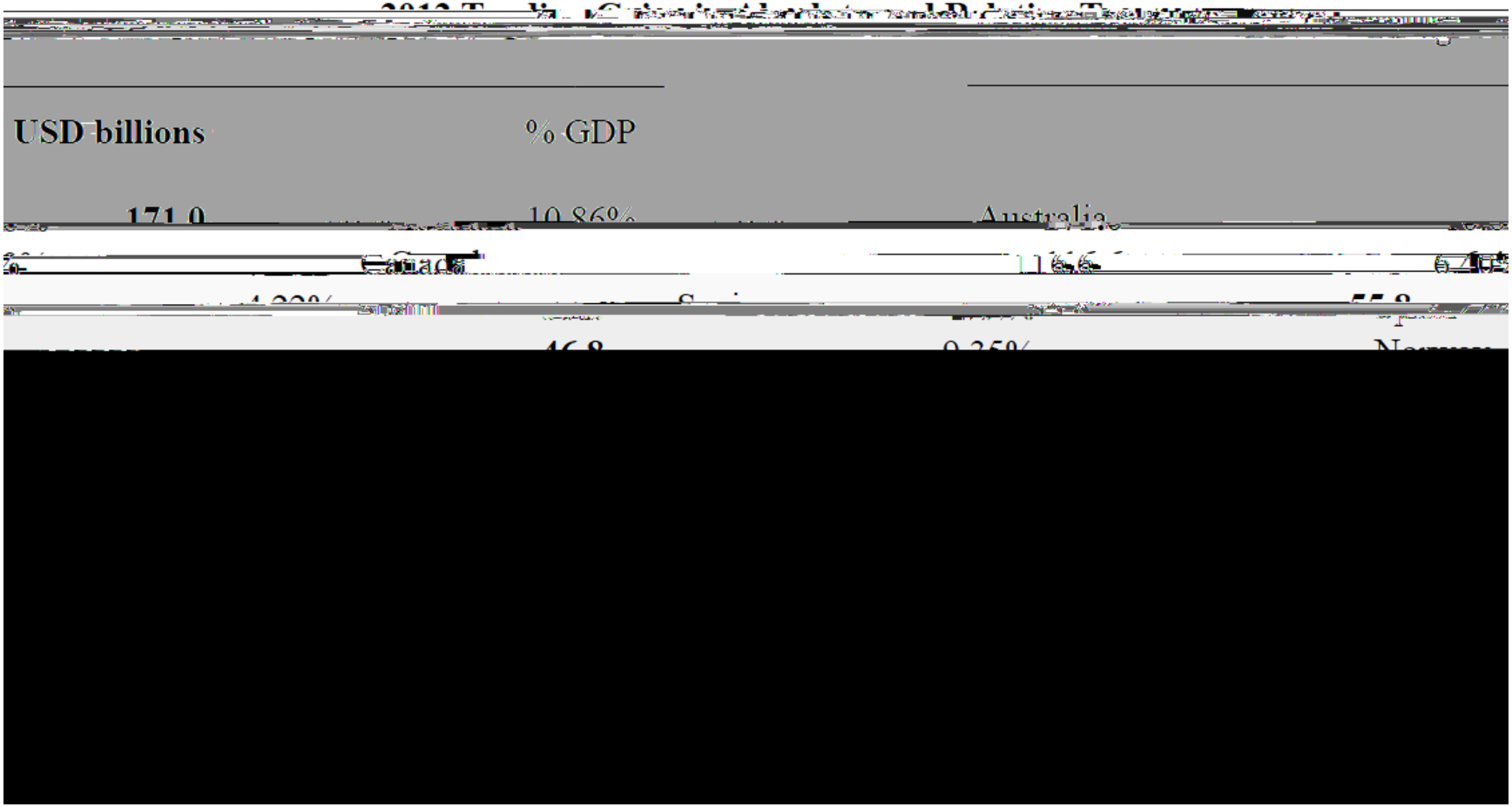

1.05
1
0.95
0.8
1970
1980
1990
2000
2010


IREE
0.9
0.85
0.8
1970
1980
1990
2000
2010


Netherlands
0.0742
0.0917
0.0564
0.9483
0.9916
0.9503
Italy
Turkey
0.9520
0.9869

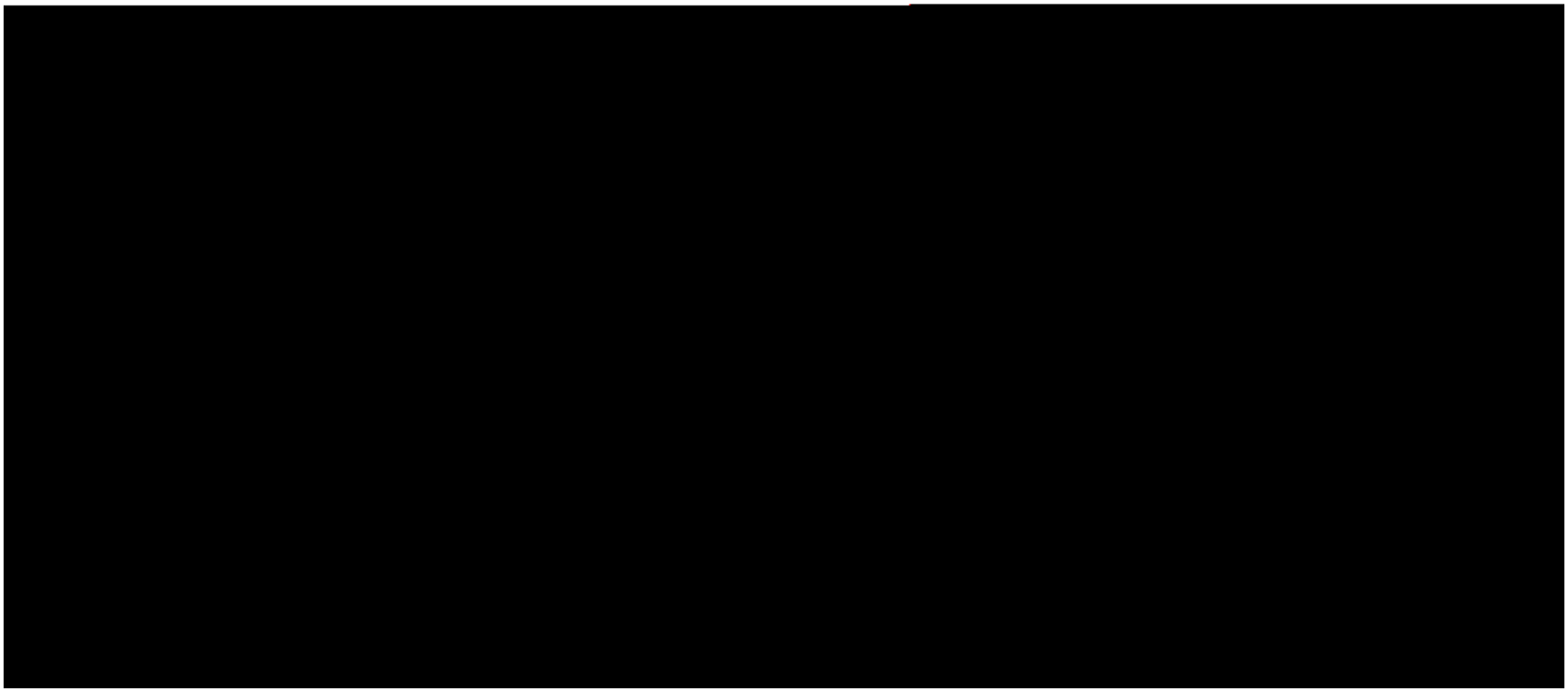
# Absolute-value trading gains and losses

- In absolute terms, the 2012 trading gains amounted to USD 171 billion for Australia
- … whereas Japan experienced a USD 731 billion loss !!!



| USD billions | % GDP | |
|---|---|---|
| 171.0 | 10.86% | Australia |
| | | Canada |
| | | Spain |
| | 46.8 | 9.35% |

**Table 3**, *continued*
**2012 Trading Gains in Absolute and Relative Terms**



# Cumulated trading gains and losses

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## Table 4

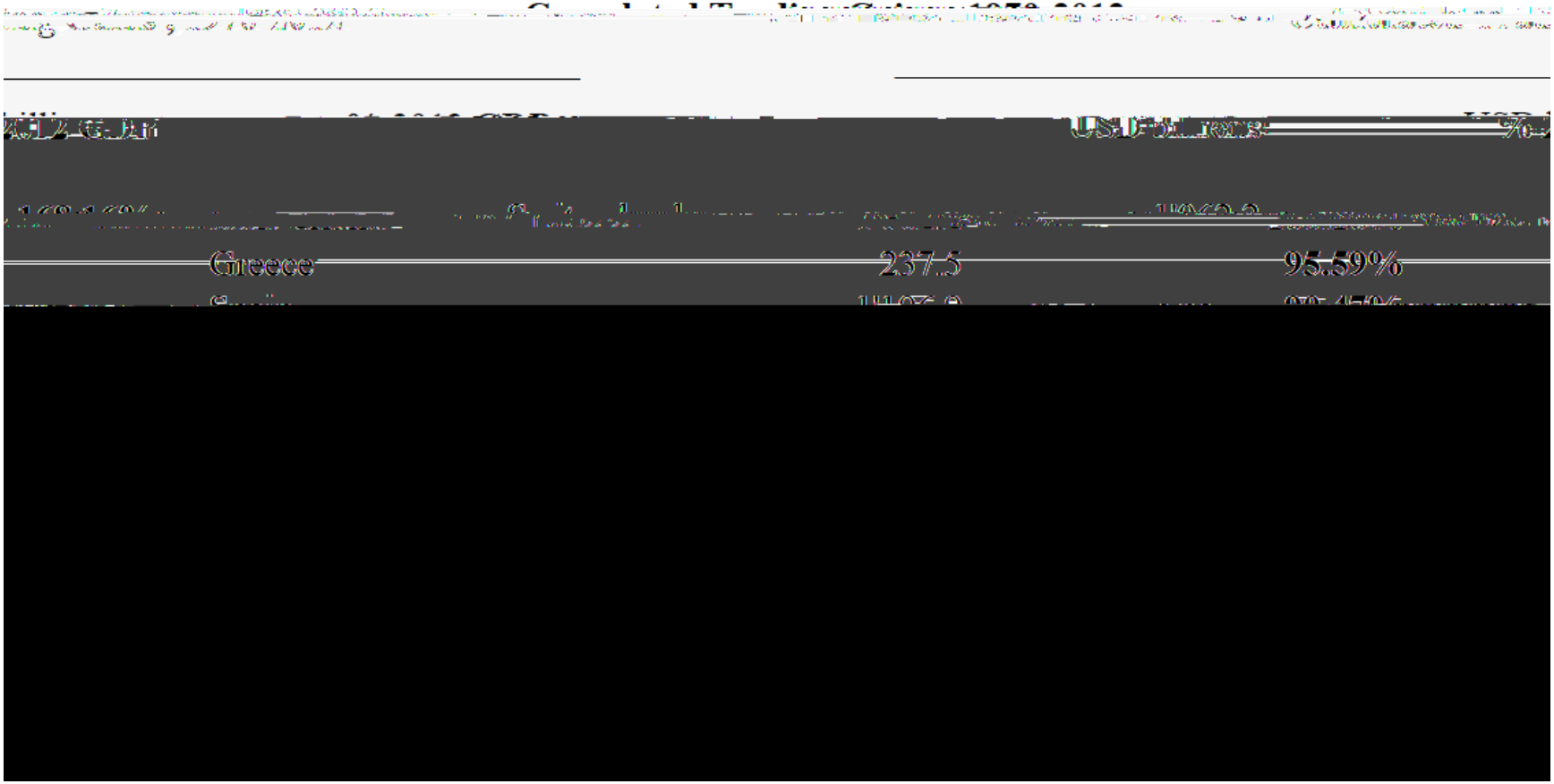
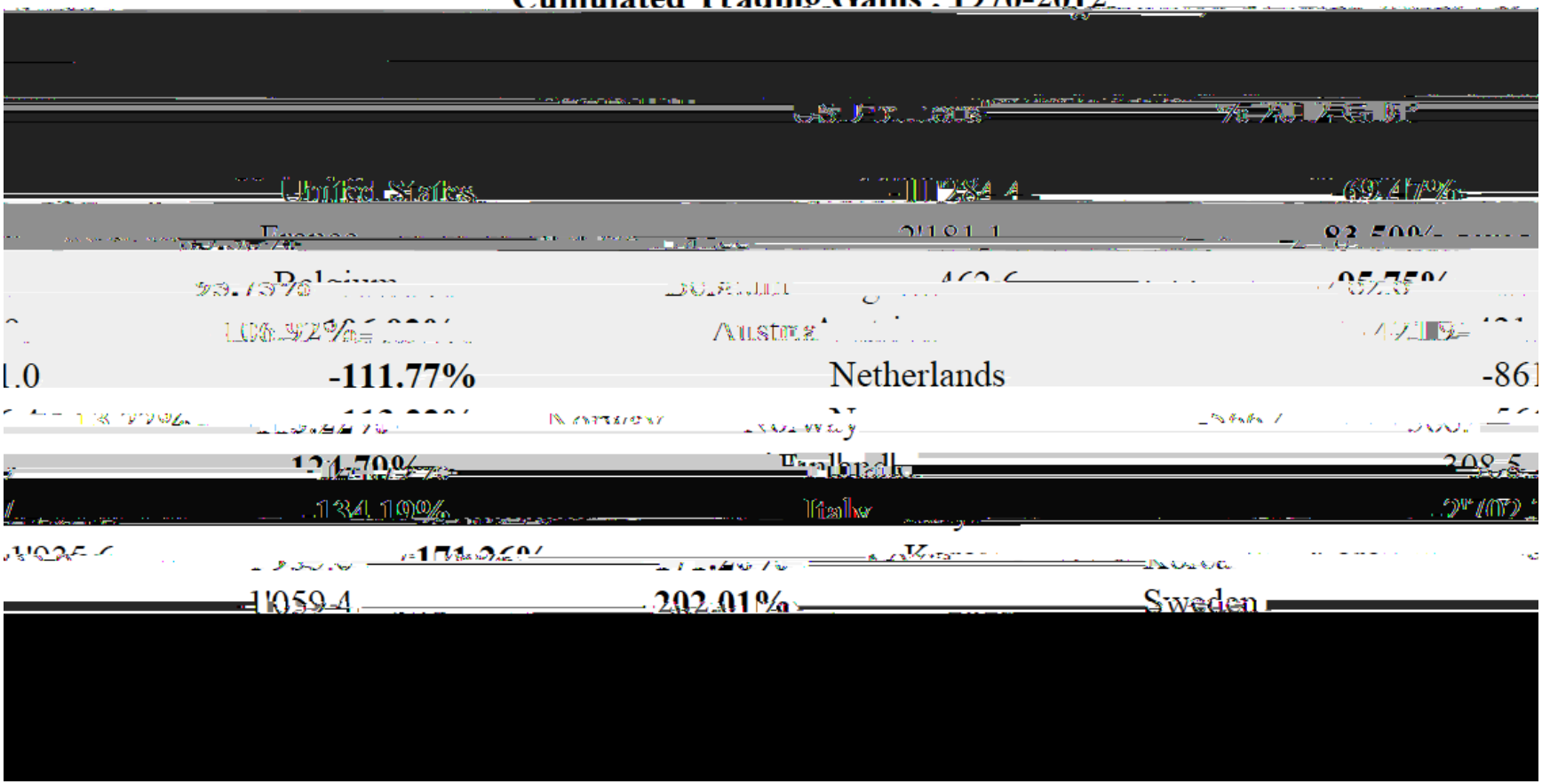


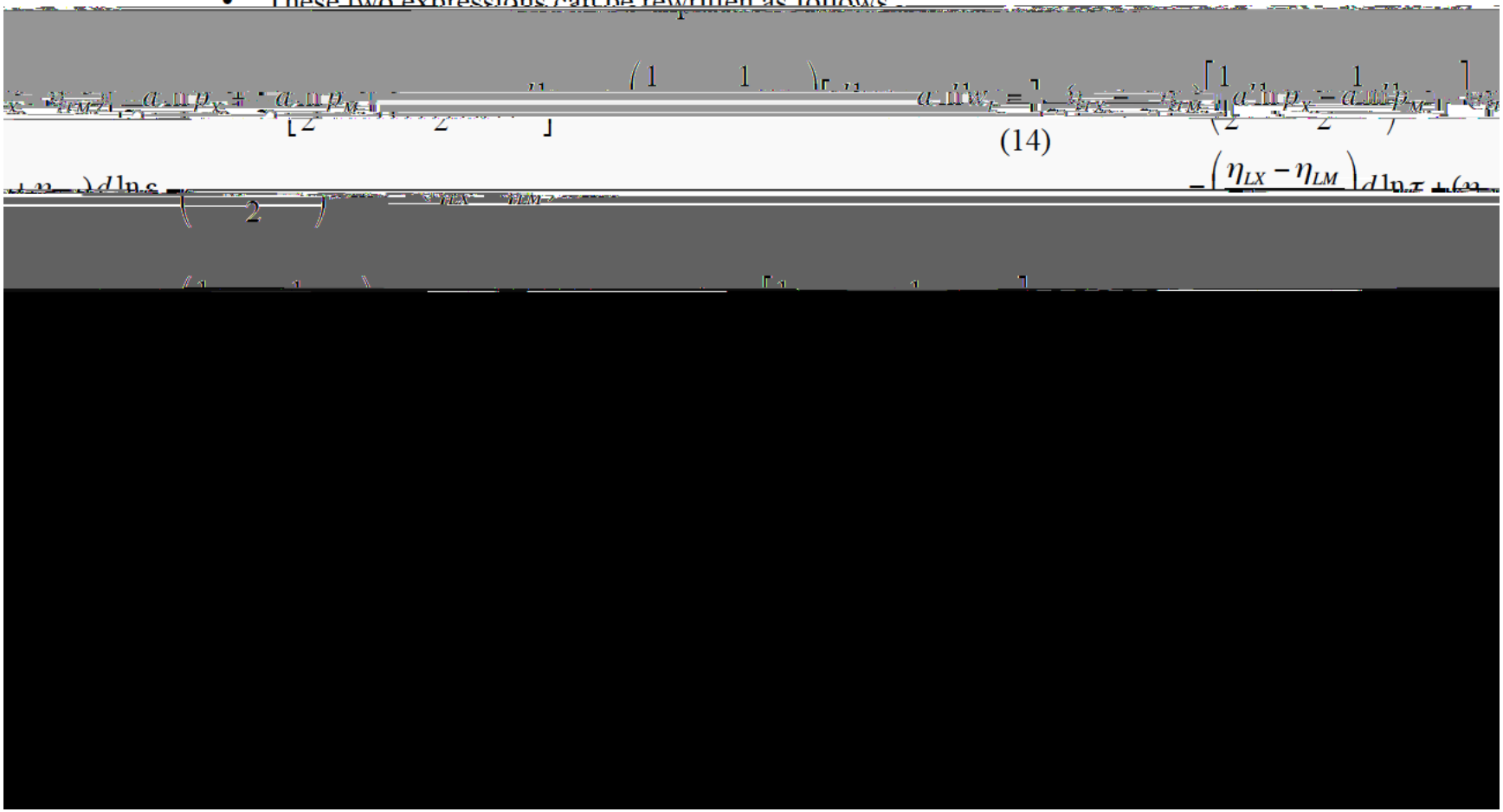
**Table 4**, *continued*
**Cumulated Trading Gains , 1970-2012**



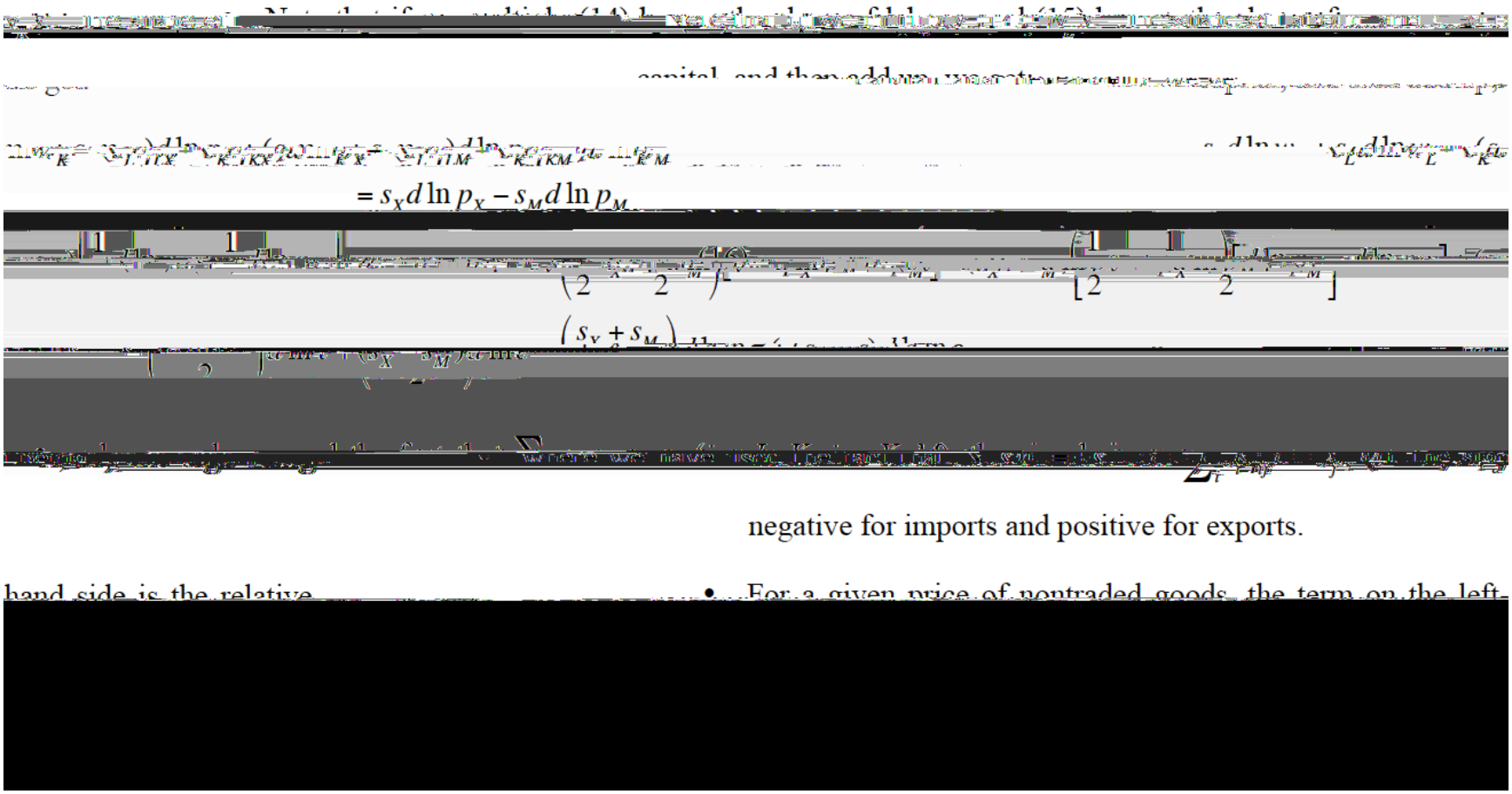
# Trading gains and income distribution

- In view of the large potential trading gains and losses, one may ask who of labour and capital are the ultimate winners or losers
- This much depends on the substitution and transformation possibilities allowed for by the technology
- Relative price effects are not necessarily neutral
- The relevant information can be summarized by the so-called Stolper-Samuelson elasticities

- These two expressions can be rewritten as follows:

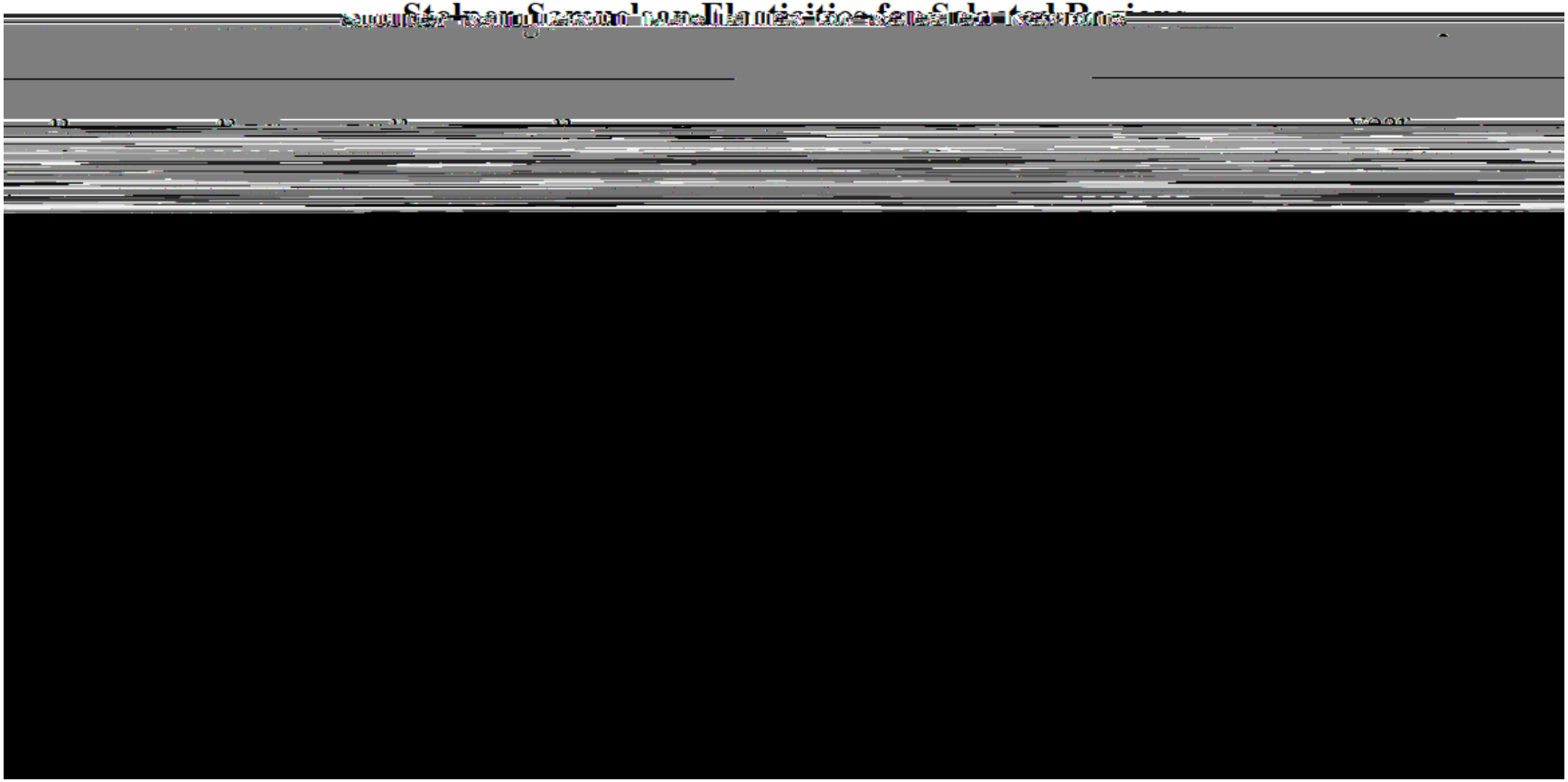


(14)



negative for imports and positive for exports.

**Table 5**



# Distributional effects of terms-of-trade changes

- In Australia, the favourable terms-of-trade effect has benefited capital almost exclusively
- ... whereas in Canada, labour has been the great winner, and capital owners have actually been hurt
- In Switzerland both factors have benefited from the terms-of-trade improvements, although capital was favoured, pocketing about half the gains in absolute terms
- In the United States, like in Canada, terms-of-trade improvements tend to favourely

# Distributional effects of real-exchange-rate changes

- In Canada, Switzerland and the United States a real depreciation of the currency benefits capital, but hurts labour
- An appreciation leads to the opposite outcome; this effect is largest for Switzerland, who is also one of the countries in our sample who has experienced the largest real appreciation of its currency
- Estimates are not available for Australia, for exports were aggregated with domestic output in the underlying model, so that only the terms-of-trade elasticity can be identified

# Estimates for the EU-15

- We have no elasticity estimates for individual EU countries, but some estimates are available for the EU-15
- These suggest that the worsening of the terms of trade that most large EU countries have experienced has hurt both factors, but capital more so than labour
- The real appreciation of the currency has benefited labour and hurt capital even further
- Given that most of the countries tended to have small trade surpluses, the losses to capital dominated the gains to labour as indicated by the overall negative real-exchange-rate effects

# GDI vs. GNI

- About 109.9% of Australia’s trading gains (which, according to Table 3, reached USD 171 billions in 2012) go to capital
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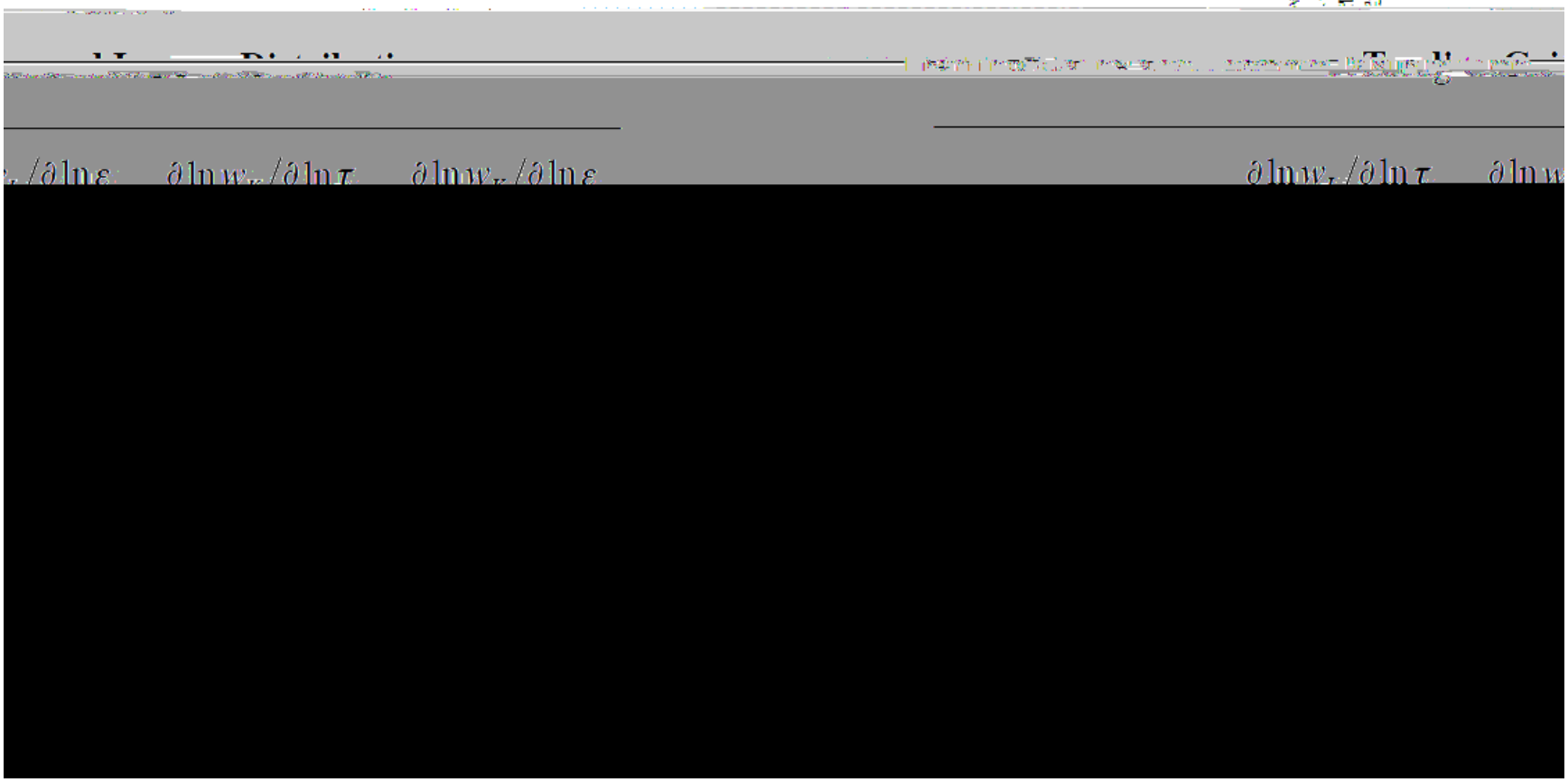

# Concluding comments

- The estimates reported in this paper are very tentative, particularly the ones of Section 5
- It must also be emphasized that this paper deals with trading gains, rather than with the gains from trade in the absolute
- The gains from trade for all participating nations must be huge, but it is next to impossible to estimate them since one would first have to come up with a model of national economies under autarky
- Nonetheless, it is important to recognize that the gains from trade vary through time
- They probably tend to increase with the size of the world economy
- Nonetheless, they might fall at times

# **Concluding comments,** continued

- The gains from trade are likely to be influenced by changes in factor endowments, in technology, and also by changes in the terms of trade and the real exchange rate
- The focus of this paper was on the last two effects, which together make up the trading gains
- Our sample of 26 countries is necessarily incomplete
- While free trade is definitely not a zero-sum game – it is Pareto improving –, the trading gains are.
- Even if incomplete, our results have uncovered huge gains and losses, sometimes multiples of annual GDP
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Thank you for your attention