What caused the rise in the UK terms of trade?

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The UK terms of trade rose by 15% from 1995 Q3 to 2003 Q1. This article looks at alternative explanations of why this happened, and what they mean for the likelihood that the terms of trade increase will endure.

Introduction

The UK terms of trade—the price of UK exports relative to the sterling price of UK imports—rose by 15% between 1995 Q3 and 2003 Q1. Whether this terms of trade rise—which, other things being equal, represents an increase in the purchasing power of UK consumers—endures could have important implications for the outlook for UK demand. That in turn may depend on what caused the rise in the first place. For example: over the same period, UK final domestic demand increased by an average of 0.9% a quarter, compared with 0.6% during 1970 Q1–1995 Q2. It is conceivable that whatever caused the terms of trade to rise also led to the increase in the growth of demand. So the path of the terms of trade over the future could be a key factor in the outlook for domestic spending.

This article sets out several possible explanations for the increase in the terms of trade, explores how they measure up to the evidence and tries to draw some inferences about how likely it is that the increase will endure.

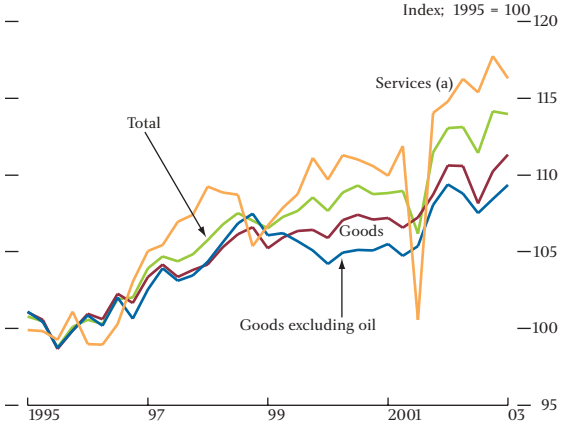
Context, accounting and measurement

Before turning to look at explanations that economic theory might suggest for the rise in the terms of trade, this section sets out some salient facts about the recent rise: how unusual it was in recent economic history; how the terms of trade have evolved relative to other statistics on the macroeconomy; and what literally 'accounts' for the rise in statistical terms. This section also discusses whether the movements in the terms of trade are simply an artifice of bad measurement.

How unusual is the recent rise in the terms of trade?

If the recent rise is a continuation of clearly visible historical trends, it might reasonably be assumed to persist. Alternatively, if it is historically more novel, we might think it more likely that the terms of trade will fall back again in the future. Chart 1 shows the movements in the terms of trade since 1995 and Chart 2 shows what has happened since 1955.(1)

Chart 1
UK terms of trade



(a) The sharp dip in the services terms of trade shown in Chart 1 reflects the effect of 11 September 2001 on the insurance sector. The value of insurance sector output is measured by recording the difference between premiums (revenues) and claims (costs). Estimates of the claims (from particularly US firms, on UK insurers) associated with 11 September were allocated to 2001 Q3. For this period, the measured value of output becomes negative. The volumes of output are assumed to be unaffected, and the volatility is therefore reflected in the export deflator.

The terms of trade are at their highest level since 1955. Yet though the 15% rise since 1995 is dramatic, the level of the terms of trade is only 4.8% higher than in 1972 Q2 and 7.7% higher than in 1992 Q2 (the two most recent peaks). So whether the terms of trade look

(1) This is the longest time series for which we have closely comparable data on the terms of trade.

Chart 2
UK terms of trade

trended or not depends to some extent on what time period we look at. Since the mid-1970s the terms of trade appear to be trended (this is true for the overall and the non-oil terms of trade, which rules out the possibility that the trend over this period was an oil price related phenomenon). If we go back as far as the late 1950s there is no clear trend apparent in the data.

Whether there is a tendency for the UK terms of trade to rise or not over time, it is certainly the case that there have been many large and persistent movements in the terms of trade before the most recent episode in 1995. For example, between 1974 Q2 and 1978 Q2, the terms of trade rose by 16% and between 1986 Q4 and 1992 Q2 they rose by around 11%. Large rises and falls are not unusual.

What are the macroeconomic circumstances surrounding the rise in the terms of trade?

Recent UK data are consistent with a story that has consumers and firms buying more imports in response to an increase in purchasing power associated with the rise in the terms of trade. Final domestic demand grew by 0.9% a quarter over the period 1995 Q3 to 2003 Q1, compared with an average of 0.6% a quarter prior to this (1970 Q1–1995 Q2). Expenditure on imports was such that the net trade contribution to GDP growth fell from about zero to about -0.2 percentage points per quarter over these same two periods. These correlations show up at higher frequencies. For example, when the terms of trade rise, the saving ratio falls, and the amount that net trade (the difference between imports and exports) subtracts from GDP growth increases.

Of course in the same period that the terms of trade rose, there was also a large rise in the nominal sterling effective exchange rate index (ERI): a rise of about 22% between 1995 Q3 and 2003 Q1. But the quarter-on-quarter correlation between the ERI and the terms of trade, unsurprisingly positive since 1995 Q3, was actually negative prior to this (1979 Q1 to 1995 Q2).

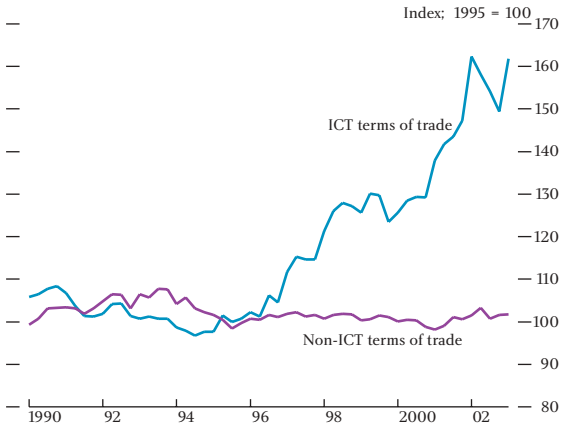
In the past, movements in the world price of oil have affected the terms of trade significantly, particularly following the two OPEC price increases of 1973–74 and 1979. But the rise in the terms of trade since the 1995 Q3 trough has not been an oil-related phenomenon. Chart 1 makes this clear, comparing the terms of trade for goods with the terms of trade for goods excluding oil. The movements in these two series have been very close.

Which industries account for the rise in the terms of trade?

The rise in the terms of trade has been more marked for services than for goods, as Chart 1 shows. In 2003 Q1 the terms of trade for goods were 12.8% higher than in 1995 Q3, compared with a rise of 17.2% for services over the same period. Despite this, and because goods make up over 70% of the expenditure basket on imports and exports combined, goods still made the largest contribution to the rise in the terms of trade.

It is interesting to note that the rise in the goods terms of trade was accounted for entirely by the rise in the terms of trade for information, communications and technology(1) (ICT) goods, as shown in Chart 3. (Although within the 'non-ICT' sector there were rises and falls for different goods that offset each other.)

Chart 3
UK terms of trade (goods)



(1) ICT includes office machinery, computers and processing equipment, electronic components, TV transmitters and telephony and radio, sound and video.

Is the rise in the terms of trade due to a change in import or export prices or both?

For both the goods and services sectors, the relative price of exports to imports rose over the period 1995 Q3 to 2003 Q1. The rise in relative prices for the services sector occurred because export prices rose while import prices stayed broadly flat, as shown in Chart 4. But the story is different for the goods sector, where both export and import prices fell, though import prices fell by more than export prices (20% compared with 10%), as shown in Chart 5, resulting in a rise in the relative price of exports to imports of goods.

Chart 4
UK services prices and terms of trade

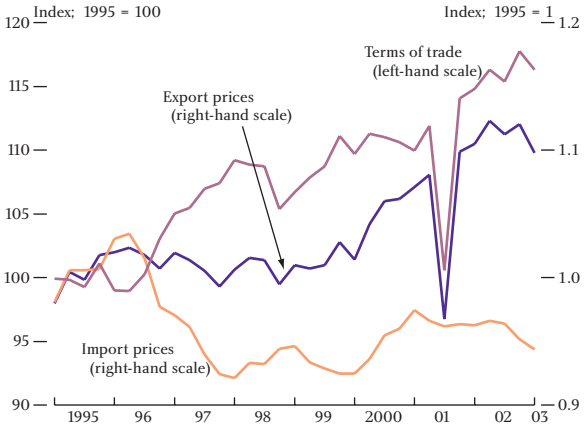
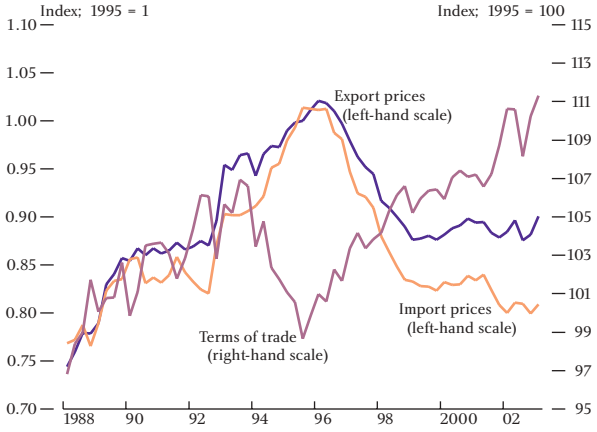


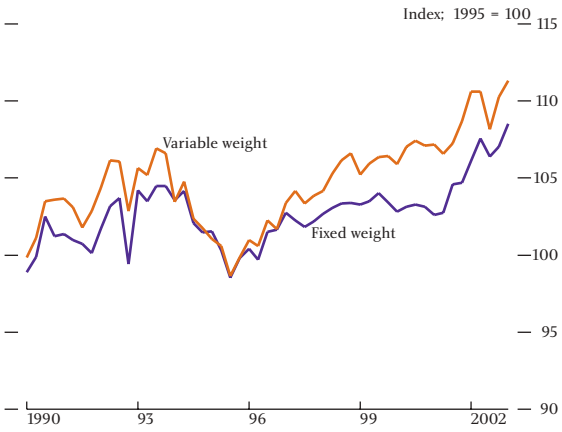
Chart 5
UK goods prices and terms of trade



Is the rise due to changes in relative prices or the composition of trade?(1)

There are two kinds of reasons (in an accounting sense) why the terms of trade can rise. The first is that export prices rise relative to import prices, holding expenditure shares constant. The second is that expenditure on imports shifts towards goods or services whose prices rise by less than the average; or that the share in export sales of items whose prices increase by more than the average rises. We can gauge the extent to which expenditure shifts explain the terms of trade change by comparing price series that hold expenditure shares constant with those that have varying expenditure shares.(2) Chart 6 does this for goods, the only series for which both types of index are available. It shows that since 1995 the 'variable-weight' series (which is our benchmark series, and used to plot Charts 1 and 2) has risen by more than the 'fixed-weight'(3) series. This suggests that expenditure shifts in either imports or exports have contributed to the rise in the terms of trade for goods.

Chart 6
UK terms of trade (goods)



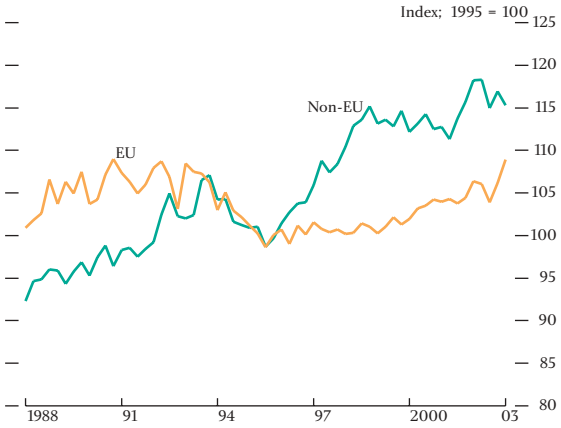
Against which countries have the UK terms of trade risen?

Chart 7 shows that the rise in the UK goods terms of trade has been predominantly against non-EU countries (16% compared with a rise of 6% against EU countries between 1995 Q3 and 2002 Q4). Looking at how the terms of trade for other countries have moved since 1995 Q3, we find that since 1995 Q3 the United States and Germany saw a small rise in their respective terms of trade of about 3%, but non-EU countries such as Japan, Korea and Thailand (all net exporters of ICT goods) have experienced falls in their terms of trade of 15%, 31% and 14% respectively (up to 2002 Q4). In

(1) Formally, the terms of trade are given by $\frac{\sum_i w_i^x \cdot p_i^x}{\sum_i w_i^m \cdot p_i^m / e}$ where w_i denotes expenditure weights, p_i denotes prices, m superscript denotes imports (expressed in foreign currency), x superscript denotes exports (expressed in pounds), e is the exchange rate written as foreign currency units per pound.
(2) Fixed-weight series are only available for goods; and only from 1963 Q1.
(3) Weights are fixed to 1995 expenditure shares.

France and Italy, the terms of trade were broadly flat.(1) It might seem that this does not add up, as we would expect a counterpart to the rise in the UK terms of trade. If there were only one other country in the world, the terms of trade of that country would fall by the same amount as those for the United Kingdom would rise. However, in reality trade with the United Kingdom forms only a small part of the trade flows for each other country.

Chart 7
Goods terms of trade with EU and non-EU countries



Is the rise in the terms of trade an artifice of imperfect measurement?

It is conceivable that some of the rise in the terms of trade does not reflect a genuine economic phenomenon, but is instead a consequence of imperfect measurement. There are three problems in measuring traded prices and drawing inferences from how they move.

First, direct measures of the price of imports and exports are not available for services, only for goods.(2) For imports and exports of services, broad indicators of inflation, such as changes in average earnings or retail price indices, are often used as proxies. For goods, about 76% of expenditure on exports involves prices derived from surveys of importers and exporters and 45% of expenditure on imports. The other prices are proxied using (among other things) domestic producer price indices and world market prices.

A second measurement problem arises because the trade prices used to compute measures of the terms of trade are not derived from annually chain-linked National Accounts.(3) When there are large changes to the relative prices of goods that make up an aggregate series like those we are studying, data that are not annually chain-linked can be misleading.(4) In fact, approximate calculations of annually chain-linked series show that the change in the terms of trade since 1995 is not a result of mismeasurement of this kind: estimates of the changes in annually chain-linked series look very similar to changes in our benchmark series (ie those that use 1995 prices to calculate expenditure shares, shown in Charts 1 and 2, for example).

A final potential problem is not so much a measurement problem as one that affects how we interpret the terms of trade data. The prices of imports and exports are the prices of goods that are a bundle of some non-traded inputs and some traded inputs. For instance, exports sold abroad reflect the price of land, machinery and labour. A change in the relative price of 'imports' and 'exports' (our measure of the terms of trade) could come about because there is a change in the price of those non-traded inputs in the United Kingdom relative to abroad. This complicates how we interpret the likely cause and consequences of a terms of trade rise. For example, if there were a reduction in labour supply (a non-traded input), the price of exports could rise relative to imports. Such a change would be unlikely to lead to an increase in the incomes of typical UK consumers (the typical UK household in this scenario would be working fewer hours and earning less).

It is conceivable that the improvement in the terms of trade since 1995 is an artifice of some of these measurement problems, and not a phenomenon that requires any economic explanation. By construction, we cannot tell without better measures of the terms of trade. But, putting that possibility aside, the rest of the article seeks to explain the data on the assumption that they are capturing a genuine economic change.

(1) There is also no obvious counterpart to the rise in the UK non-oil terms of trade.
(2) For more information about the methodologies used for the construction of trade prices, see Ruffles and Williamson (1997) and Ruffles (1997).
(3) The ONS has chain-linked the national accounts every five years, the latest base year being 1995. However, it will switch to annual chain-linking from September 2003. The impact of chain-linking on the National Accounts was discussed in a box on pages 14–15 of the May *Inflation Report*.
(4) Currently, the change in prices is calculated by weighting together the change in prices of items in the (import or export) basket. These weights are based on shares in 'real expenditure', where the real expenditure on each good is nominal expenditure deflated by 1995 prices. An annually chain-linked series would use expenditure weights that reflected changes in prices over time. The problem with infrequently chain-linked series like those we have occurs if there is a large relative price change between goods within (say) the import basket. A large relative price fall of one good in the import basket, for instance, would bring with it, other things being equal, a decline in the share of expenditure taken by that good. Weighting using base-year prices would not capture this fall in expenditure, and so the price fall would be given too high a weight in the aggregate series, and the fall in the overall import price index would be overstated. See Tuke and Ruffles (2002) and Beadle and Tuke (2003).

What might have caused the rise in the UK terms of trade?

There are several potential economic explanations for the recent rise in the terms of trade. This section describes each one in turn and examines empirical evidence to determine whether or not it was the likely cause of the rise in the UK terms of trade since 1995 Q3.

An increase in demand for UK exports

One possibility is that global demand may have shifted towards UK exports. If this were to happen, the price of UK exports would be bid up, and the terms of trade would rise. Returns in the UK export sector would rise and this would increase UK income per head relative to abroad. UK consumers would gain from the rise in profits, and from the fact that they could buy more imports for the same amount of exports. This increase in UK incomes would lead to a rise in the price of non-traded goods in the United Kingdom relative to abroad. As consumers became richer, their demand for non-traded goods and services (like, for example, land) would increase. And since the terms of trade and the price of non-traded goods in the United Kingdom relative to abroad would rise, this amounts to saying that the real exchange rate (crudely, the sum of the two) would rise.(1)

Recall that the terms of trade increase came about because the fall in the price of imports exceeded the fall in the price of exports (Charts 4 and 5).(2) So, for this story to fit the facts, we need some other explanation (perhaps an increase in the productivity of traded sectors in all countries) why both prices fell, and for this to have been coupled with a shift in demand towards UK exports to mean that the fall in UK export prices was more muted.

The evidence for the idea that global demand for UK exports increased is mixed. As noted above, spending of UK firms and consumers accelerated following the terms of trade increase, consistent with an improvement in UK purchasing power. The average quarterly growth rate of total domestic demand in the United Kingdom between 1995 Q3 and 2002 Q4 was 0.9%: demand in the major six (M6) international economies grew by 0.5% on average per quarter.(3) The real exchange rate rose by 32% over the period.(4)

One possibility is that this increase in global demand took the form of an increase in the demand for services, in which the United Kingdom has a comparative advantage. (This can only be a part of the explanation for the rise in the terms of trade, since most of that increase was due to goods.) One fact that might support this possibility is that the share of UK exports in world exports grew over the period 1995 Q3–2002 Q2.(5) And looking at the United States, which accounts for about 23% of total UK exports of services, we see that the US terms of trade for services have fallen by approximately 5% since 1995. As we document later, there is some evidence that the United Kingdom has become more 'specialised' in services.

But the hypothesis that there has been an increase in demand towards UK exports does not fit all the facts. Charts 8 and 9 show striking similarities between the shares of different goods in UK imports and exports, and how they have evolved over time. At this level of disaggregation, there appears to be no significant difference between the composition of UK imports and exports of goods. This is also the case for imports and exports of services. The shares of imports and exports of services (in total imports and exports respectively) have remained broadly unchanged since 1988 (about 20% for imports and 25% for exports). The fact that the import and export baskets are similar implies that any shift in global demand towards some good should affect the price of imports and exports equally. Of course, it is possible that at some finer level of disaggregation the import and export baskets do differ.(6)

(1) The increase in income per head in the United Kingdom would also mean an increase in the UK demand for imports. However, given the size of the UK economy, it does not seem likely that this increase in demand could affect world prices, driving up the price of UK imports. It is also worth pointing out that in the very long run, the shift in global demand towards the UK export sector would cause that sector to grow, as new firms set up employing workers who formerly worked in other sectors. As the supply of UK exports rose, the terms of trade would begin to fall back.
(2) The goods and services export deflator fell by about 5% whereas the goods and services import deflator fell by 17% from 1995 Q3 to 2003 Q1.
(3) Proxied by the M6 countries plus the United Kingdom.
(4) According to the IMF definition.
(5) Over the period 1995 Q3–2002 Q2 the share of the nominal value of services exports of M6 countries (Canada, France, Germany, Italy, Japan and the United States) plus the United Kingdom accounted for by UK exports grew from 11.7% to 14.4%. Source: National Institute for Economic and Social Research (NIGEM database).
(6) Later in the article, we discuss Michaely indices of specialisation for the United Kingdom, which do reveal some differences in the import and export bundles (see Chart 10). These figures are based on values, while the figures in Charts 8 and 9 are based on volumes.

Chart 8
UK import shares in goods

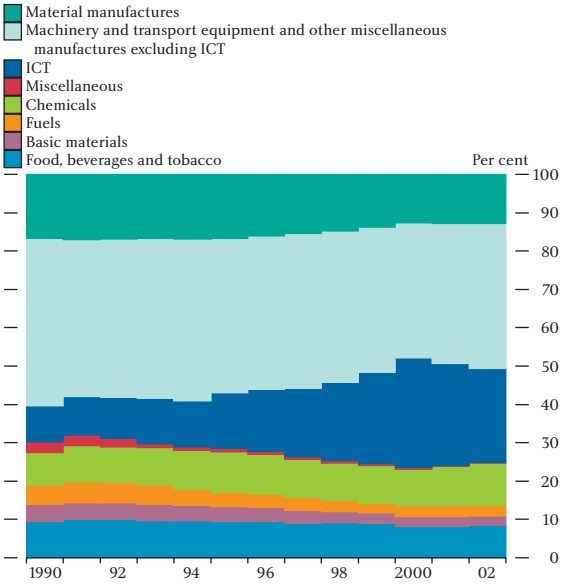
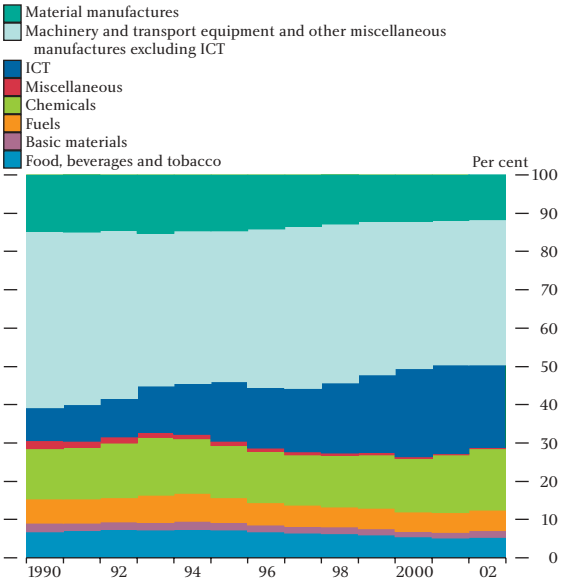


Chart 9
UK export shares in goods



An increase in the efficiency of other countries' export sectors

A rise in the terms of trade could have been due to an increase in supply in foreign export sectors, which reduces the price of foreign exports (the price of UK imports). That could have come about because foreign productivity rose relative to the United Kingdom, or because foreign exporters became more competitive: monopoly power in those sectors could have fallen, or regulations loosened, or there may have been some fall in tariff or other non-price barriers to trade.

If this were the explanation, UK consumers would have enjoyed the increase in purchasing power induced by the improvement in the terms of trade but they would not have acquired the transfer of income that a change in tastes towards UK exports would have brought. Instead, foreign consumers would experience a rise in their income per head. This would increase their demand for UK exports, which would drive up the price of UK exports, reinforcing the effect on the UK terms of trade. It is not clear what would happen to the real exchange rate: it could rise or fall. So we cannot use evidence of that sort to evaluate this theory.(1) The fact that the real exchange rate rose is consistent with—but not really evidence in support of—this theory.

There is evidence that foreign productivity rose relative to the United Kingdom at the same time as the rise in the terms of trade took place. Average annual total factor productivity growth was a little over a half of that in the United States and four fifths of that in Germany.(2) Table A sets out data on the growth in labour productivity per head for the traded and

Table A
Average annual labour productivity growth rates in the traded and non-traded sector(a)

	United Kingdom	United States	Japan	Germany	France	Italy	Canada
Traded sector							
1992–95	5.1	3.7	1.6	4.8	4.6	4.5	3.2
1996–99	1.3	4.3	2.8	2.1	2.8	2.0	-0.1
Non-traded sector							
1992–95	2.7	0.5	0.0	0.9	0.1	1.7	0.8
1996–99	1.7	2.4	0.1	1.2	0.7	0.0	0.1

Sources: Bank calculations, OECD.

(a) Growth rates in the latter period for Japan and France are 1996–98 and for Canada is for 1996–97.

(1) Whether the real exchange rate would rise or fall turns on how close a substitute are UK and foreign traded goods. If they are close substitutes, then any increase in the terms of trade we see could have been brought about by quite a small productivity improvement abroad. That in turn would mean that the increase in real incomes abroad would be small, and this would mean that the price of foreign non-traded goods (like land, for instance) would not be bid up much. If that is the case, the UK real exchange rate could rise, since the rise in the terms of trade is only partially offset by the fall in the price of UK non-traded goods relative to non-traded goods abroad. Conversely, if UK and foreign traded goods are not very close substitutes, a larger productivity improvement would have been needed to bring about the improvement in the terms of trade, and that in turn would mean that the increase in foreign incomes could bid up the price of non-traded goods abroad, by enough to mean that the overall real exchange rate for the United Kingdom falls.

(2) Total factor productivity is defined as the amount by which output growth exceeds growth in the quantity of labour and capital used in production. Source: NIESR productivity database. Referred to in O'Mahony, M and de Boer, W (2002). Database available on www.niesr.ac.uk/research/prodc.htm. Calculations by Bank of England authors.

non-traded sectors for the United Kingdom and a number of its major trading partners. The United Kingdom's average annual growth in labour productivity per head in the traded sector over the period 1996–99 was 1.3%, substantially lower than that of our major trading partners, with the exception of Canada. The table also ties in with the observation that the rise in the UK terms of trade was mainly against non-EU countries: the slowdown in UK productivity is more marked against non-EU than EU countries. The EU countries have also experienced a relative slowdown in productivity but not to the same extent as the United Kingdom.

One fact noted above is indicative of the productivity explanation. Almost the entire rise in the United Kingdom's terms of trade for goods can be accounted for by a rise in the terms of trade in ICT goods. This would suggest that there has been a rise in productivity in prominent ICT-exporting countries, their export prices for ICT goods (UK import prices of ICT goods) have fallen, and that there has been a fall in their terms of trade. Indeed ICT import prices into the United Kingdom fell by 57% between 1995 Q3 and 2002 Q4. And prominent ICT exporters, such as Thailand and Korea, did experience a significant fall in their terms of trade over the same period (14% and 31% respectively).(1) A fall in the price of ICT imports would have a significant effect on the UK terms of trade if the United Kingdom was a significant importer of ICT goods. In fact ICT imports account for a large share of total UK imports of goods (an average of 22% since 1995 Q3). The United States is also a large importer of ICT goods (ICT goods accounted for an average of 13% of total US imports of goods since 1995 Q3) and experienced a rise in the terms of trade in ICT goods. The US terms of trade in 'computers, peripherals and parts' rose by 15% from 1995 to 2001.

However, this explanation by itself also has problems fitting some of the facts. Demand by foreign consumers and firms fell relative to that in the United Kingdom, not what we would expect if foreign incomes had risen relative to ours. Moreover, if there had been a productivity shock in some sector, regardless of the country, we might have expected it to have affected import and export prices in the same way, since, as we have pointed out the UK import and export bundles appear to be very similar at the levels of disaggregation available. Finally, if what has happened is related to an improvement in the productivity of the ICT sector, it is striking that it affected the United Kingdom differently from the euro area.(2)

The fall in foreign export prices could, as noted above, have been due to changes in tariffs. There is some partial evidence to support this hypothesis. UK import tariff rates have fallen by nearly 44% since 1995 compared with a trade-weighted average fall of 32% for both the United States, Japan and Canada (since the implementation of the single market in 1992 there have been no tariffs on flows of goods between the United Kingdom and the European Union).(3)

A shift in the composition of demand or supply in the United Kingdom

A shift in the composition of demand and supply could have contributed towards a terms of trade improvement.

First, it is possible that there was an increase in the demand of UK buyers for goods that, for whatever reason, subsequently saw a relative price fall. This demand change would mean that UK budgets would go further, and amount to an increase in effective real incomes. Total UK consumption could rise.

Alternatively, there could have been a shift in the share of UK export sales towards goods that (for whatever reason) subsequently saw a relative price increase. That might happen because of changes in the pattern of foreign demand, or because of changes in the United Kingdom—perhaps changes in the regulatory environment, for example.

There is some supporting evidence that some type of expenditure shift has taken place since 1995 Q3. About one third of the rise in the terms of trade for goods since 1995 Q3 can be accounted for by expenditure

(1) It may be that the fall in the terms of trade in countries such as Thailand and Korea was due to the significant currency depreciations these countries experienced, although it is difficult to assert this with any confidence.
(2) To figure out why this was the case, we would need data on trade in ICT goods between the euro area and the rest of the world. That would enable us to determine whether the euro area imported ICT goods in different quantities, or of different types, or from different places than the United Kingdom (and carry out the same analysis for euro-area exports of ICT goods). Unfortunately, we do not have these data readily available.
(3) Source: *UNCTAD Handbook of Statistics*. This figure is for the European Union as a whole, so we are assuming that the United Kingdom can be taken to be similar to the average EU country. To the extent that the pattern of trade of the United Kingdom with non-EU countries differs from the trade flows for other EU countries, this figure may not be very precise.

shifts. Chart 6 showed this, by comparing the rise in a fixed-weight terms of trade series with one that re-weights as the shares of different goods in expenditure change.

Charts 8 and 9 show there has been an expenditure shift towards ICT goods in both imports and exports, the category of goods that 'accounts' for the change in the terms of trade for goods. Moreover, within the ICT category, there has been a greater shift in expenditure towards computers (which have seen the largest increase (about 70%) in the terms of trade) within imports than in exports. In 1990 44% of ICT imports were of computers (and related equipment). By 2002 this figure had risen to 65%.(1)

An expected productivity improvement in the United Kingdom

If firms and consumers expected the United Kingdom to be (permanently) more productive in the future, the terms of trade could rise. Consumer demand would increase in anticipation of the extra income to come, and firms would start to invest to acquire more machines to take advantage of the new opportunities to make profits. Some of this demand would be for goods produced by the UK traded goods sector, which also supplies foreign markets. This would bid up the price of those goods. If the increase in demand of UK buyers for goods produced by the UK traded sector was greater than the increase in UK demand for foreign goods, the UK terms of trade would rise. The increase in real incomes for the United Kingdom would also bid up the price of UK non-traded goods like land and labour, so the real exchange rate would also rise.

Once the future productivity improvement was realised, (and if some of it occurred in the traded sector) the terms of trade improvement would reverse: the extra supply to the market would push down UK export prices.

There is some evidence that supports this explanation for the terms of trade improvement. As discussed earlier, UK domestic demand rose relative to its trading partners.

However, the difficulty with this explanation is that the expectation of the productivity rise would have been formed at a time when UK productivity was actually falling relative to its trade partners. It is conceivable that it was precisely the slowdown in *actual* productivity relative to other countries that led to the anticipation of a future productivity *increase* as the United Kingdom caught up. But this seems a little far-fetched. In the past, productivity differences across countries have proven very persistent.

A rise in the relative degree of impatience of UK consumers or an easing of credit conditions

Another possible explanation for a rise in the terms of trade is that UK consumers became more 'impatient'—something changed for them that meant that saving was less attractive than before—and wanted to borrow more heavily against future income. This would increase current demand, and would generate the same set of effects as the increase in expected future productivity discussed above. Alternatively, it may simply have become easier for consumers to borrow, as credit conditions eased. This in turn may have been because of some change in the financial sector such as regulatory reform or an increase in competition.

It is hard to rule this explanation in or out. The rise in UK demand relative to abroad, the rise in the real exchange rate, and the rise in UK asset prices are all symptoms consistent with these types of effects, but they are consistent with many of the other explanations put forward. There is also no hard evidence that it is easier to borrow than before. For example, there is no clear trend since 1995 in spreads on personal sector lending (either secured or unsecured). And although there has been a good deal of financial deregulation that made borrowing easier for consumers, that took place in the 1980s and is not so plausibly related to the period we are focusing on: the second half of the 1990s. Against this, the rise in house and equity prices itself may have eased credit constraints for those who do not have alternative sources of borrowing, and by more than for consumers and firms in other countries.

Globalisation

One conception of the world economy is that it has become increasingly 'globalised' in some sense, and that the pace of this globalisation has increased recently. Globalisation could refer to many things, but it should be explicable in terms of the kinds of theories we have already discussed—since these amount to a typology of

(1) This compares with 41% for exports of computers in total ICT exports in 2002.

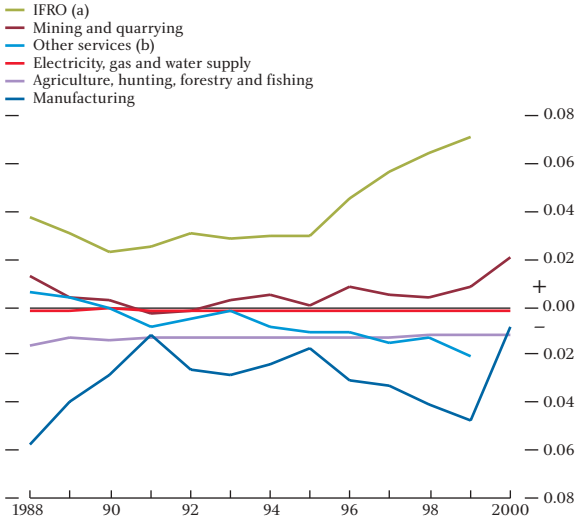
all the 'real' factors that could have shifted the terms of trade.

First, globalisation could result in significant increases in the supply of foreign exports, reducing their price and increasing the UK terms of trade. In an increasingly globalised world economy, costs such as transport costs and barriers to entry fall, and thus prices of internationally traded products fall. These changes may affect global production such that the basket of goods and services that the United Kingdom imports becomes cheaper relative to the basket of goods and services the United Kingdom exports. The fall in export and import goods prices experienced by the United Kingdom as well as the rest of the developed world is evidence that some improvement in competition has taken place across at least the traded goods sectors of the world economy.

Second, globalisation may have brought about an increase in actual or expected world income per head. As poorer countries become richer, it is conceivable that their preferences may shift towards goods that tend to be produced by richer countries. Globalisation could therefore have generated an apparent shift in demand towards UK exports. There is evidence to support this. GDP per head has increased more in the least developed countries than in the rest of the world since 1995 (2.2% compared with a world average growth rate of 1.4%).(1)

Third, globalisation may lead to specialisation. The effect of that on the terms of trade is not really clear. It could mean that export firms become more efficient, and sell goods at lower prices (in which case the terms of trade should fall if this specialisation affects the United Kingdom more than our trading partners). But it could also lead to an increase in demand for some goods in which the United Kingdom has a lead, as more foreign buyers switch to buying these goods from abroad, than producing at home, and this should bid up the terms of trade. One example might be services like insurance, accounting and consulting.(2) Charts 10 and 11 report the Michaely index of specialisation across sectors for the United Kingdom and a combination of large economies, respectively.(3) An index like this records 'specialisation' as being high when a sector's exports take a larger share in total exports than its imports take in total imports. There is some evidence that the United Kingdom is more specialised in certain financial services than other countries and that it has become increasingly so over the recent past.

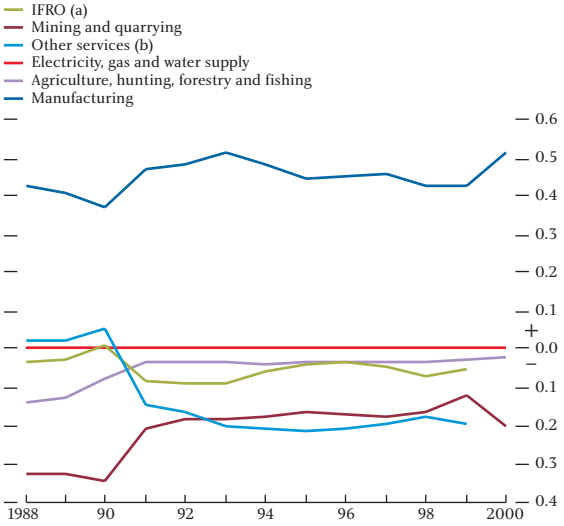
Chart 10
Michaely index for the United Kingdom



Source: OECD STAN database.

(a) Includes insurance and financial services, royalties and license fees, other business services.
(b) Includes transportation, travel, communication services, information services, personal services.

Chart 11
Michaely index for the United States, France, Germany, Italy and Japan



Source: OECD STAN database.

(a) Includes insurance and financial services, royalties and license fees, other business services.
(b) Includes transportation, travel, communication services, information services, personal services.

There are difficulties with associating the UK terms of trade improvement with the globalisation argument.

(1) Source: *World Bank's World Development Indicators* (WDI). UN classification is used for defining the least developed countries group.
(2) Though with insurance, the United Kingdom's predominance in this field surely predates 1995.
(3) The index is computed as the difference between the export share of a sector in national exports and the import share in national imports. A positive value indicates specialisation in that specific sector (see Michaely (1962)). Economies included are the United States, France, Germany, Italy and Japan.

Countries that have been more affected by globalisation, such as China and the former communist countries, still account for a small share of world GDP and do not appear to have markedly increased their imports from the United Kingdom. Moreover, as noted above, for globalisation to have a positive effect on the UK terms of trade it has to have different implications for the United Kingdom than its major trading partners. This could happen if the baskets of imports and exports of the United Kingdom and our major trading partners were significantly different. However, the share of different industries in UK and world imports has remained remarkably similar and evolved in the same way over the recent past (see Tables B and C).(1)

Monetary explanations: price stickiness and the nominal exchange rate

It is also possible that the terms of trade could have risen for reasons connected with the appreciation of the nominal exchange rate in (and following) 1996. For example, suppose that sterling rose because of a fall in the exchange rate risk premium. (Suppose, in other words, that sterling was suddenly perceived to be less risky, or that the correlation of the returns from sterling with investors' needs became more advantageous.) Suppose too that prices are only changed every so often, and that all firms set prices in their own currency: UK firms selling abroad print price lists in sterling. If sterling rises, the price to foreigners of sterling exports rises in terms of their own currency. And the price of imports into the United Kingdom falls. The terms of trade rises. When the time comes to adjust prices, however, the terms of trade will return to the level before the exchange rate moved: real demand and supply conditions in traded goods markets have not changed.

If firms that export set prices in the foreign currency, however, the terms of trade would fall (the rise in sterling would mean that the sterling value of UK exports would fall and the sterling value of UK imports would remain the same). It is clear that how firms set prices is crucial to whether the nominal exchange rate rise can explain the rise in the terms of trade. In reality, it is likely that there are some firms which set prices in their own currency, and some that set prices in the foreign currency. It turns out that for the terms of trade to improve following a nominal exchange rate appreciation, there has to be a larger proportion of firms in the United Kingdom pricing their exports in sterling than there are those abroad pricing their exports into the United Kingdom in sterling. If this holds, the sterling price of exports would fall by less than the sterling price of imports, thus increasing the terms of trade.

There is no direct evidence on the extent of home versus foreign currency pricing by firms in the UK export sector, and firms exporting into the United Kingdom, so this explanation cannot easily be verified. However, there are two facts that make this an unlikely explanation for the terms of trade rise. First, the path of the terms of trade since 1995 Q3 suggests that this explanation is unlikely to be behind what was seen in

Table B
UK import shares by industry

	Food, live animals, beverages and tobacco	Crude materials	Mineral fuels	Chemicals	Manufactured goods equipment	Miscellaneous manufacturing	Commodities	Machinery and transport	Services
1988	8.18	4.61	3.88	7.18	15.17	11.08	1.12	30.91	17.86
1996	7.73	3.08	3.06	8.14	12.85	11.26	0.70	34.08	19.11
1999	6.90	2.38	2.09	7.74	11.16	11.96	0.68	36.30	20.78

Source: OECD.

Table C
World(a) import shares by industry

	Food, live animals, beverages and tobacco	Crude materials	Mineral fuels	Chemicals	Manufactured goods equipment	Miscellaneous manufacturing	Commodities	Machinery and transport	Services
1988	7.67	5.41	8.34	6.31	12.63	10.80	2.25	26.81	19.78
1996	6.69	3.73	8.00	6.44	10.44	11.75	2.75	29.27	20.92
1999	5.90	2.97	6.44	6.82	10.10	12.23	3.17	32.80	19.56

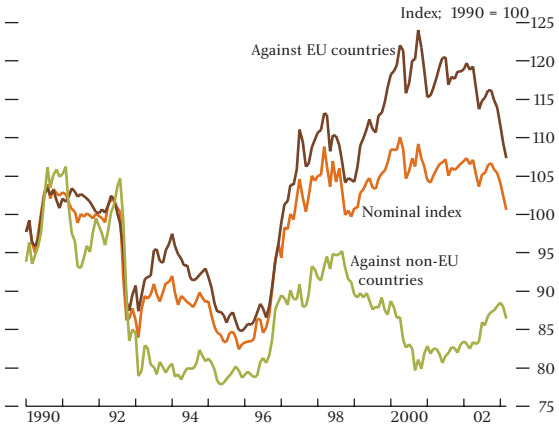
Source: OECD.

(a) The world is proxied by the United States, Japan, Germany, France and Italy.

(1) See also Charts 8 and 9.

the data. The theory described so far would predict that the terms of trade should rise by a large amount, at the same time as the exchange rate appreciation, and then fall back. In fact, the terms of trade increase has been gradual, and persistent.(1) Second, the terms of trade improvement was accounted for predominantly by a rise against non-EU countries: yet the rise in the nominal ERI was accounted for predominantly by a rise against EU currencies (see Chart 12).

Chart 12
Sterling effective exchange rate



Conclusions

Between 1995 Q3 and 2003 Q1 the price of UK exports relative to the price of imports—the terms of trade—rose by 15%. Whether they remain at this high level or not could have implications for the outlook for demand in the United Kingdom. The rise in the past was associated with, and may have contributed to, an increase in the growth of demand. If the terms of trade were to fall back, it is therefore conceivable that spending would be lower than otherwise. Whether the terms of trade fall back or not may depend on what caused them to rise in the first place.

In an accounting sense, the rise was almost entirely accounted for by a rise against non-EU countries. The rise was more marked in services than in goods, but because goods make up over 70% of the import and export baskets, the rise in the terms of trade for goods was the largest contributor to the overall rise. In the case of goods, the rise in the terms of trade reflects the fact that export prices fell by less than import prices; for services, export prices rose and import prices were broadly flat.

It is not clear whether the post-1995 rise reflects a recent shock or if it is the continuation of an older trend. From the mid-1970s, the terms of trade appear to be trended upwards. Looking further back than that, to the early 1960s, it is plausible to argue that there is no upward trend in the terms of trade. Throughout the past few decades, the terms of trade have seen many large fluctuations. Overall, it is hard to draw precise conclusions from looking at the history of the terms of trade as to whether they will remain at their current high level or not.

The article suggested several economic reasons for the terms of trade increase: a shift in global demand towards UK export goods; an increase in the efficiency of foreign export sectors; a shift in the composition of either demand for imports by UK consumers towards goods that became cheaper, or in the supply of UK exports towards goods that became more expensive; an increase in expected future income in the United Kingdom; increasing impatience by UK consumers or firms seeking to borrow more against future income, or a relaxing of credit constraints leading to more borrowing; the terms of trade rise could be associated with ongoing 'globalisation' of production; or, finally, it could have been caused by the sharp appreciation of the nominal exchange rate in 1996.

On the face of it, since the nominal appreciation of sterling was predominantly against the EU countries, and the terms of trade rise was predominantly against non-EU countries, this does not look like the explanation.

To the extent that we believe that the rise in the terms of trade is likely to have a 'real' explanation, we can at least conceive, though by no means be certain, that it will endure for some time.

It is hard to rule any of the other explanations in or out. All are consistent with some of the evidence yet none are consistent with all of it. It is probable, therefore, that there is no single cause of the terms of trade rise.

It is plausible that there could have been a change in tastes, which increased global demand for some UK exports. The most plausible candidate for this is the services sector. Moreover, the fall in the US services

(1) One possibility that could reconcile this theory with what happened is that initially, firms thought that the rise in sterling was temporary. So UK exporters, for instance, were prepared to price in foreign currency units and accept a fall in their sterling export prices. As time wore on, some of those firms switched to pricing in sterling in an attempt to restore profit margins, and this caused the terms of trade to rise.

terms of trade provides a counterpart to the UK increase.

There is also striking evidence that productivity rose in foreign traded sectors relative to the UK export sector. But if this is the source of the terms of trade improvement for the United Kingdom, it remains to be explained why domestic demand increased relative to our major trading partners when in fact the opposite should occur. The terms of trade increase for goods was accounted for by the rise in the terms of trade for ICT products, and it is possible that improvements in foreign productivity in that sector are behind that. The same terms of trade improvement in ICT seems to have been manifest in the United States. And the terms of trade fell for prominent ICT exporters like Thailand and Korea. Yet it is not clear why the improvement in foreign ICT sectors did not bring about the same change in the EU terms of trade.

An anticipated productivity improvement in the United Kingdom relative to our trading partners could have caused the terms of trade improvement, but it seems odd that an expectation of a productivity improvement took hold at the same time as UK productivity growth slowed relative to that abroad.

Changes in the composition of the demand for UK imports towards lower priced products, or changes in the supply of exports towards higher priced products could also explain the terms of trade improvement. About a third of the rise in the terms of trade for goods has been due to changes in the composition of trade, rather than changes in relative prices. As an example, the share of ICT goods in imports has risen in the United Kingdom since 1995 Q3, and to repeat, this is exactly the category of goods that accounts for the rise in the terms of trade for total goods.

It is plausible that the terms of trade rose because of an acceleration in borrowing—caused in turn by an increase in the desire of consumers to bring forward future consumption, or a loosening of credit constraints. It is certainly true that demand and borrowing accelerated after 1995: but whether this was simply a result of some other event (for example, a shift in global demand towards UK exports, pushing up UK incomes) or an independent explanation is not clear. The rise in house and equity prices relative to the United Kingdom's major trading partners, however caused, would itself have relaxed credit constraints for some UK consumers and firms.

The notion that the terms of trade increase has been related to the increasing globalisation of production is at first sight appealing but it is hard to see how globalisation should have affected the United Kingdom so differently from its major trading partners: the United Kingdom's import and export bundles look remarkably similar to those of other larger countries.

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