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## Globalization, earnings and consumer prices: Taking stock of the benefits from global economic integration

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# Globalization, earnings and consumer prices: taking stock of the benefits from global economic integration

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DOES GLOBALIZATION – defined as increased global economic integration – lead to a middle-class squeeze in the developed part of the world by depressing wages and income? Or to put it differently: will blue-collar workers, and increasingly white-collar workers, loose from continued globalization, especially the integration into the world economy of labour in China, India and emerging Asia?

Pop internationalists, to use a phrase by economist Paul Krugman, would like you to believe that the Western industrial population or its middle class soon will be a bygone phenomenon, increasingly pressured out of

the global labour market from ever more competitive Asians.<sup>2</sup> Few issues in economics have caused so much public anxiety and debate as the, allegedly, adverse effects on jobs and income from globalization.

In the late 1980s, Japanese firms were by some considered to be so competitive that European and American firms would not be able to survive if markets were open to Japanese competitors. Protective measures were adopted in a long series of antidumping cases against Japan. Yet the fear was obviously unfounded. In the last Fortune Global 500, a ranking of the 500 biggest companies in the world, only four Japanese firms

## SUMMARY

Globalization has been accused of stealing jobs and depressing wages in the developed part of the world. China's entry into the world economy, in particular, has sparked fears about a "middle-class squeeze". These fears resemble the anxiety in previous eras over the rise of new emerging markets. As recent as twenty years ago, Japanese firms were by some considered to be far too competitive for American or European firms to survive. Now, as then, most of these fears are based on erroneous facts and wild exaggerations.

Earnings growth in the U S has slowed down, but not to a very considerable extent if non-wage compensations and distributional effects of disinflation are accommodated. In some European countries, real earnings also for blue-collar workers have increased faster in the last decade than in previous decades. In other countries growth has been low for people in manufacturing, while it has overall been high for white-collar workers. Little evidence, however, supports the claim that trade liberalization is behind the slowdown of earnings growth

for blue-collar workers in countries with slower earnings growth.

The remarkable period of disinflation between 1980 and today has fed into higher real income. Real income is not only a function of the wage level, but also of prices and what a consumer gets for her income. This paper analyses disinflation and its implications for real income. It presents some counterfactual analyses of what the real income would have been, and what some goods would have costed, if globalization had been frozen at its level in 1970 and 1980.

were in the top-50 league (rank 6, 37, 40 and 45).<sup>3</sup> The United States, on the other hand, had five companies only in the top-10 league. Such rankings do not say much about how countries fare in global competition, but since fears of supreme competition from emerging markets never seem to die it is worth bearing in mind that American and European multinational firms still represent the overwhelming majority of the biggest and most competitive firms in the world.

In the 1990s, Ross Perot, the populist Presidential candidate in the 1992 election, warned about the “giant sucking sound” from U S production moving to low-cost Mexico. His warning came shortly before the start of one of the most impressive periods of productivity, growth and job creation in the post-war history of the United States. Annual productivity growth in the non-farming business sector, which averaged at 1,4 percent between the early 1970s and the mid 1990s, jumped to 2,7 percent in the period 1996-2006. Economic growth averaged at 4 percent a year between 1994 and 2000 and unemployment was halved in the same period.<sup>4</sup>

Twelve years after Perot’s unfounded warning, and amid a good recovery cycle with exceptionally good job creation in the U S, Presidential candidate John Kerry took fears of globalization to a new rhetorical level and accused American firms (or chief executives of firms) outsourcing jobs to low-cost countries for being “Benedict Arnold companies or CEOs”. Benedict Arnold was no less than a traitor in the American revolutionary war.

Politicians in Europe have also carried their anxiety on the sleeves and exploited fears about globalization, jobs, and income. High structural unemployment and rigid labour markets in Europe have also added an extra dimension to this fear. Factory closures, especially when production is moving to the eastern part of Europe or to Asia, are always well exposed in the media and triggers hostile responses and commentary. Closures induced by globalization have provoked politicians in several European countries to threaten companies with blocked government procurement of their goods. References to parasites and similar creatures in the world of nature have often been made, especially in Germany. Forgetting or neglecting the historical connotation, Franz Müntefering, a former Chairman of the German SPD party, compared in 2005 international investors with a “swarm of locusts”. When Nokia recently decided to move a factory from Bochum (Germany) to Cluj (Ro-

mania), Jürgen Rüttgers, the Christian Democratic Governor of North Rhine-Westphalia, invoked this parasite again in the public debate when describing his views on Nokia’s decisions. Kurt Beck, the current SPD Chairman, announced that Nokia phones were not welcome into his house any longer – “Ein Nokia-Handy kommt mir nicht mehr ins Haus!”<sup>5</sup>

Trade unions in countries such as France, Germany, Italy and Sweden have staged strikes when factory closures have been announced. When Electrolux in 2006 announced its plan to close its factory in Nuremberg, which happened at the same time as Deutsche Telekom announced its plan to reduce the number of its staff with 30 000 people, IG Metall, the main blue-collar trade union in Germany, staged several strikes which shook German politics and labour-market relations.<sup>6</sup>

Factory closures or job losses, whatever their reasons, are always problematic and often tragic for affected individuals. More generally, globalization not only has its winners but also its losers. Yet from the viewpoint of economic research, there is no doubt that globalization overall has given large contributions to economic growth and improving welfare in most parts of the world and to most people. Nor is such a proposition hotly contested among informed observers.

This paper is about the effects of globalization on income and welfare. Yet it is not primarily concerned with the broad questions of how globalization affects income or the distribution of its gains (and pains). Rather than going through exhaustive studies and data on the links between globalization, growth, income, distribution and other indicators, this paper will take a closer look at the effect of globalization on consumer prices and, by extension, real income. Consumers and purchasing power are surprisingly often neglected in analyses of globalization and income. Despite the widespread knowledge of the positive effect on consumer prices from globalization, discussions on the real income effect of globalization often only brushes quickly over consumers and consumer prices. The reason for this neglect, however, is often understandable; it is very difficult to measure how a consumer-price development exactly is affected by globalization and how it subsequently feeds into the real-income development.

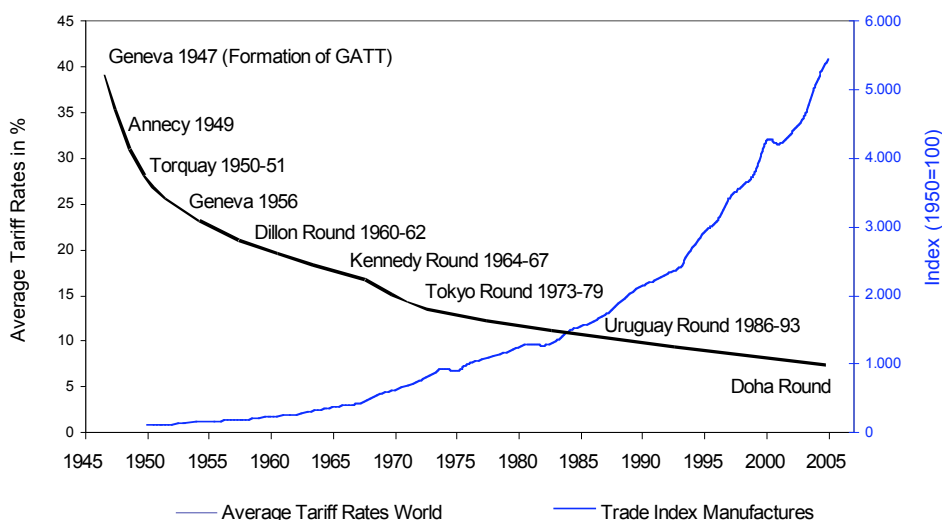
The paper will discuss developments in Europe and the United States, but the data analysis in the second part of the paper will, for reasons of comparability, be confined to Europe and especially cover four EU countries: France,

Germany, Sweden and the United Kingdom. The paper will engage in some counter-factual calculations on the development of real income if globalization had not increased since 1970. It should already at this point be emphasized that such calculations are inherently speculative and can only serve as indicators and not as final truths, if such knowledge ever has existed. However, the insights yielded are important in order to give a proper account of the effect on real income and purchasing power from global economic integration.

### GLOBALIZATION, JOBS, WAGES AND INFLATION

GLOBALIZATION, IN WHATEVER way we define it, has surged in the last decades. As figure 1 shows, average tariffs on manufactures have come down significantly and trade has increased sharply. Trade has consistently grown faster than output, and the size of most countries' trade sectors have increased. The U S trade sector has increased from 11 percent in the 1970s to 27 percent in 2005. The trade sector in the Euro area has moved from 43 to 74 percent in the same period. The global FDI stock tenfolded between 1980 and 2000, and in 2006 global FDI flows amounted to 1,3 trillion US dollars.<sup>7</sup>

**FIGURE 1. TARIFF REDUCTION IN THE GATT/WTO AND WORLD MERCHANDISE TRADE 1947-2005**



Source: Erixon, Freytag & Pehnelt (2007).

European and American critics of this development have accused globalization of stealing jobs and depressing wages for people in their countries. Both propositions might be true, and there is a certain logic to the argument: low-cost countries attract production from Europe and the U S, and when production moves to other countries demand for labour is falling, which will put a downward pressure on wages. Honest critics will say that globalization also creates job in the developed part of the world, but the net result, however, is on the minus side.

The effects of NAFTA on jobs in the U S have in particular provoked many estimates on exact numbers of job losses. Groups like the Economic Policy Institute (EPI) have been active putting out new data. In 2003 it claimed that 879 820 net jobs have been lost due to NAFTA.<sup>8</sup> Two years earlier, the Jobs with Justice and Citizen Trade Campaign put the number at 766 000. There are other studies which claim a positive net result due to NAFTA, and these studies are generally of a much higher quality.<sup>9</sup>

However, there is a more fundamental question which needs to be asked: are calculations like these meaningful exercises? No, they are not. Trade agreements and international trade are important but they have very small effects on aggregate employment for the simple reason that total employment is a function of other factors, especially the number of people in the labour force. Trade affects the composition of jobs, but not aggregated labour supply and demand to any significant degree. Similarly, unemployment is a function of the business cycle, demographics, and labour-market policies rather than trade.

Labour markets in Europe tend to be rigid and prices are usually sticky across the developed world, but even when these factors are accounted trade does not play a significant role in determining the number of jobs.

Even if it did – and even if the effects were as negative as NAFTA opponents claim – the number of lost jobs is almost negligible when the figure is compared with overall job creation in the U S economy. This is not to say that trade or globalization has no effect at all on jobs; some are laid off because of

globalization, others are hired because of globalization. But aggregate employment and unemployment are hostages to other forces. Furthermore, of the jobs lost to structural adjustments, only a small part is represented by trade or outsourcing. According to the OECD and several studies, the impact of technology surpasses by far the impact of delocalization.<sup>10</sup> In whatever way structural employment is analyzed, displacements are largely a story of technological change.

The same conclusion is valid when wage inequality is analyzed. There has recently been a lot of debate about globalization and income inequality, especially in the United States. Many observers have highlighted increasing income differentials between the rich and poor – or between the super rich and all other income groups. These claims are supported by wage data and have fed into a broader concern of rising inequality which has put the spotlight on trade and trade liberalization.<sup>11</sup>

However, many observers have jumped to conclusions without paying enough attention to the facts. Inequality has been on the rise in Europe as well as America, but much of this development took place in the 1980s rather than in the 1990s or in recent years. Parts of the rising inequality can be explained by reforms of tax policy rather than actual income developments.<sup>12</sup> Also, inequality gets significantly lowered when measures accommodating non-salary payments are used instead of simple wage indicators. These revisions do not change the overall pattern of rising inequality, when defined as income differentials, but it reduces considerably the increase of inequality.

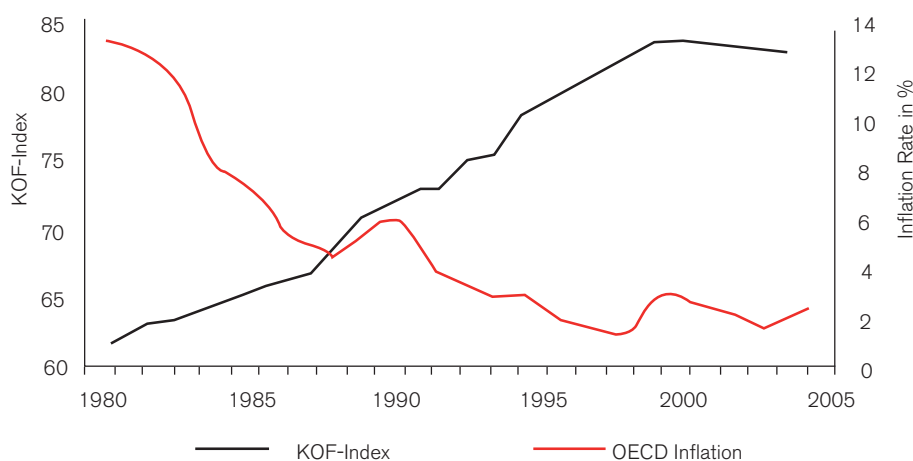
None of the serious explanations to rising inequality suggest that trade is the determining factor. Arguably, basic trade theory would suggest that the integration into the world economy of big emerging countries in the last decade should have led to sharply rising income differentials between skilled and unskilled labour. But the reality does not correspond with theory, at least not to a sufficient degree.<sup>13</sup> Trade has had a small effect on rising inequality, but it is other factors that primarily explain inequality. Technological change and education are the chief determinants.

Comparisons of wages, however, often only rest on income differentials. Wage (or labour compensation) is an

important part of income, but it is not the only part. Income is also a factor of prices and what a person can buy for his or her money. This part of the inequality matrix is surprisingly often forgotten, but a proper understanding of the price development is important to understand the evolution of income and also distributional patterns.

Nor is it a small issue. As figure 2 shows, there has been a remarkable period of disinflation in the OECD area since the early 1980s. Global inflation at large has also come down considerably, from levels around 40 percent in the early 1990s to approximately 7-8 percent in recent years. The period of disinflation has also corresponded with a sharp increase in globalization. This is not to say that globalization has been the chief factor behind disinflation – changes in monetary and central bank policy have probably been more important – but it has arguably been key to the pattern of lower variations in inflation. Inflation has become less responsive to the domestic output gap since 1980. Moreover, economic conditions in main trading partners have become more important for determining inflation. Furthermore, reforms opening up for economic freedom and trade are positively correlated with disinflation. Competition has increased and taken away power for monopolists to set prices. Globalization and greater competition, as economist Kenneth Rogoff has pointed out, also relieve governments from political pressures to inflate.<sup>14</sup>

**FIGURE 2. GLOBALIZATION AND INFLATION IN OECD COUNTRIES 1980-2005**



Source: Pehnelt (2007).

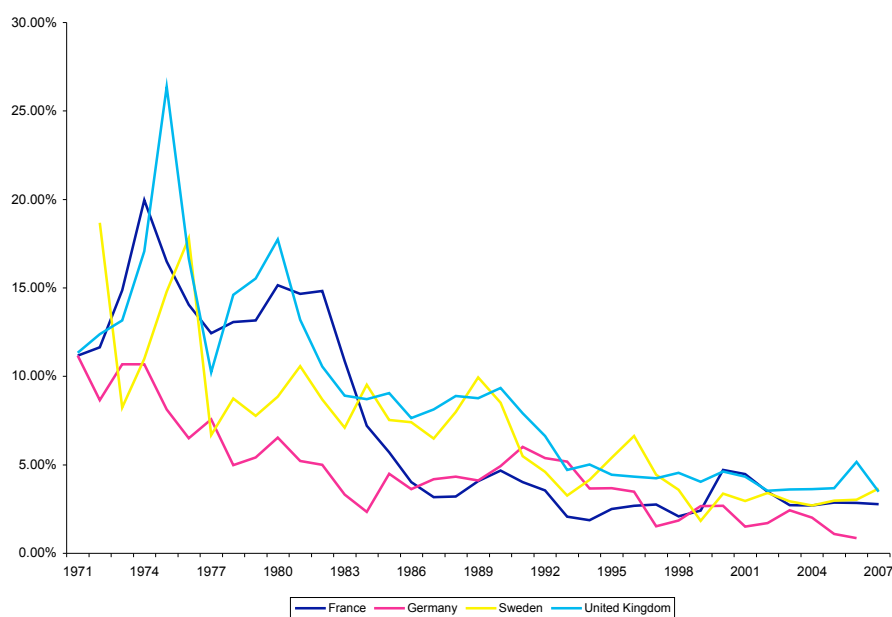
Explanation: The KOF-index, produced by the Swiss Institute for Business Cycle Research at the ETH in Zurich, is used as a measure of globalization.

## HOURLY EARNINGS AND LABOUR COSTS

LET US NOW turn to data on income developments. In the following chapter we will especially study the developments of earnings, income and prices in four European countries: France, Germany, Sweden and the United Kingdom.

Wages can be measured in various ways. Figure 3 displays the annual variation in nominal earnings for manufacturing labour. Earnings, rather than nominal wages, are used to capture also payments to labour that are not classified as wages, such as year-end bonuses, health-care insurance payments, and other forms of compensation. One frequent mistake in analyses of wages – or the effect on wages from globalization – is the neglect of non-direct wage payments. This is especially a problem in analyses of US wage data; a significant portion of the increase in US labour compensation in the last decades have been represented by non-wage compensation.<sup>15</sup>

**FIGURE 3. ANNUAL VARIATION OF NOMINAL HOURLY EARNINGS IN MANUFACTURING**



Source: OECD, Labour database

In our group of selected European countries, annual growth rates of nominal hourly earnings in the manufacturing industry ranged from 5 percent to over 25 percent in the 1970s. Since the late 1990s, none of these coun-

tries experienced a growth rate above 5 percent. Figure 3 clearly shows a downward trend of growth rates for hourly earnings in manufacturing.

However, the nominal variation of earnings is not a good indicator of income or welfare. It says little, if anything, about the real value of the earnings or earnings growth. The chief explanation to the slowdown of the nominal earnings growth is falling inflation. In the 1970s, inflation was high in all these countries – it was high in most part of the developed world – and inflation expectations fed into higher nominal earnings demand. Yet it did not lead to significant real earnings growth.

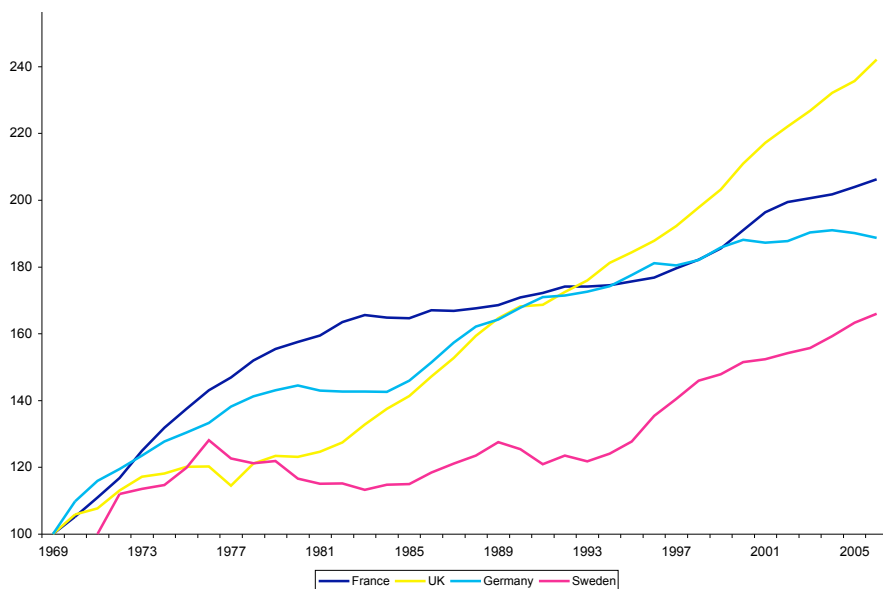
Figure 4 presents an index for *real* hourly earnings in the manufacturing industry. Nominal earnings have been adjusted with the general consumer price index (CPI) for each country to provide an illustration of the earnings growth on top of the annual increase in prices of a given basket of usual consumer goods and services. One can discuss whether the CPI or a producer price index is the proper deflator, but since the discussion here is couched

in the context of the purchasing power of wages the CPI has been used.

There are differences between the sampled countries. Whereas the British and French worker saw its real hourly earnings more than double over the period, the Swedish worker really started to be better off only in the mid-1990s. In fact, the Swedish worker did not experience an increase of its real wage between mid-1970s and mid-1990s. In France there was a steep growth between the late 1960s and early 1980s, but then growth flattened. Since the last 1990s the pace of real earnings growth has increased again. Germany has experienced a fairly constant rate of growth.

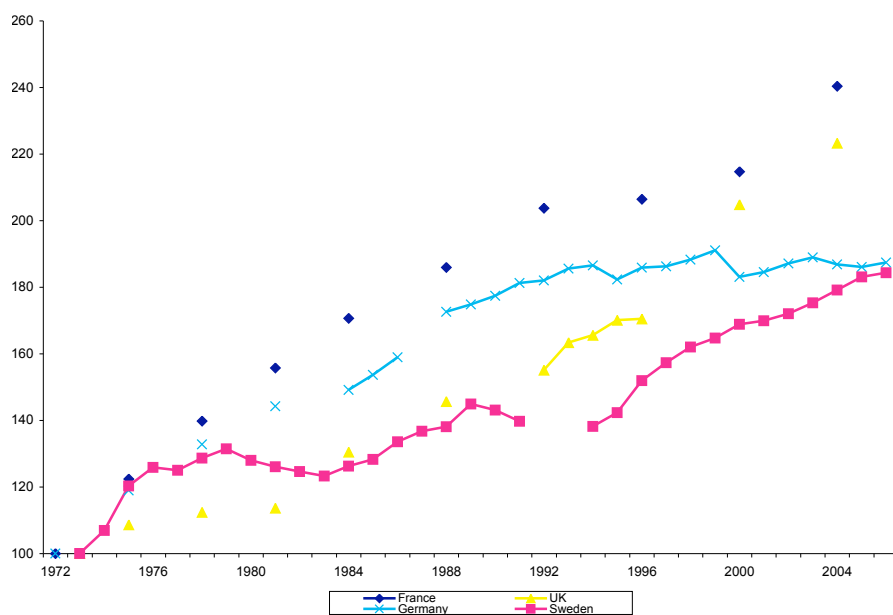
In the mid 1980s growth was higher than in the 1990s and in recent years. The UK has had a rapid growth since the early 1980s and is the country whose real earnings have grown fastest in this sample.

**FIGURE 4. REAL HOURLY EARNINGS IN MANUFACTURING (100=1969; SWEDEN:1971)**



Source: OECD, Labour and Price database. Own calculations.

**FIGURE 5. REAL HOURLY LABOR COST INDEX (100=1972-1973)**



Source: ILO, database "LABORSTA", Labor cost yearly statistics

countries since the 1980s. Trade, however, is not the explanation to the changed ratio between skilled and unskilled

workers. Nor does it explain differences between countries or differences over time.

A final indicator on labour compensation is the real labour cost. While earnings only include direct payments from employers to workers in cash, labor costs include any additional costs incurred by the employer. These include provision of housing, cars, food and other gratuities, recruitment, training, social security expenditures, etc. To be comparable with earnings, nominal labour costs have been deflated the general consumer price index. Figure 5 shows an index for real hourly labor costs.

Labour costs have increased faster than earnings. This is especially true in France and Sweden, where labour costs increased nearly twice as much as labour earnings. However, there are differences over time. In France, most of the increase in real earnings happened before the 1980s, while Sweden really took off since the early 1990s.

Germany initially followed a pattern similar to France's but real labour costs increases slowed down around the second oil shock. Both earnings and labour costs then increased again in the second half of the 1980s, but flattened out in the 1990s. The United Kingdom shows the most stable and sustained growth of earnings and labor

costs. Apart from a negative growth of -5 percent in 1977, growth rates of real hourly earnings remained positive for the whole period.

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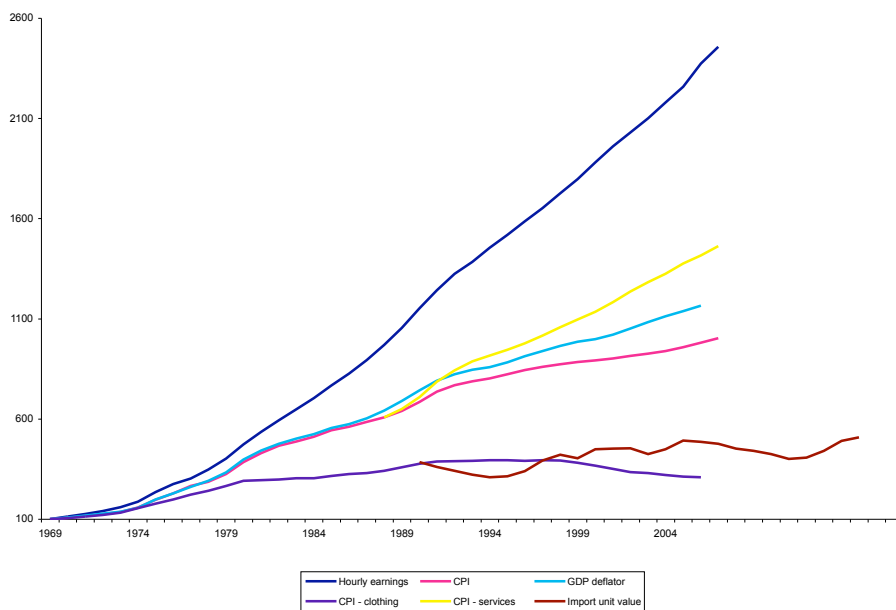
## GLOBALIZATION AND PRICES

LET US NOW turn to price development. To understand how real income has developed it is necessary to study the level of prices. As was shown in Figure 2, inflation in the OECD are has come down considerably from the high levels in the 1970s and the 1980s. In the last year, inflation has increased above trend and above inflation targets. The inflation pressures, however, have essentially come from rises in commodity prices and not, as in previous decades, been home made.

Increasing competition in international markets has put pressure on wages and labour earnings. However, increasing globalization has also provided tremendous benefits to consumers in the form of lower prices. Low prices, generated by higher competition and openness, have been a driving force to improve the level of real income of average workers and consumers. It is particularly unskilled workers or low-to-middle income earners who have benefited from disinflation. They generally spend a higher share of their income on non-durable goods, and such goods have been at the centre of globalization. Prices on imported goods have risen much slower than the prices of services, which tend to be consumed by people with higher incomes. According to a study by economists Christian Broda and John Romalis, the distributional effect of disinflated consumer prices – prices on goods produced in China and sold by retail chain Wal-Mart – has been substantial.<sup>16</sup> In the periods between 1994 and 2005, inflation for U S households in the lowest tenth income percentile has been 6 percentage points lower than inflation for households in the top percentile. Real inequality, therefore, has largely been unchanged during this period.

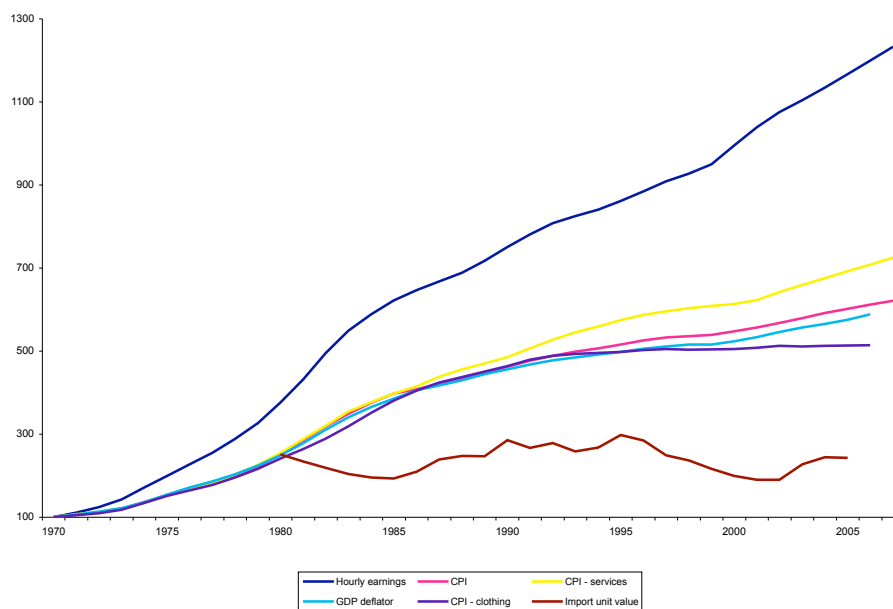
To illustrate the positive impact of globalization on real income through downward pressure on inflation, the price of items that are highly tradable and others that are much less traded are compared. Specifically, figures 6 to 9 show consumer price indices

FIGURE 6. UK: PRICES AND EARNINGS INDICES (1969=100)



**Sources:** Earnings and CPI: OECD Price and Labour database. CPI-Clothing: ILO LABORSTA, Consumer price indices yearly statistics. GDP deflator: World Bank, WDI online database. Import unit value: United Nations Common Database (UNCDB). Own Calculations.

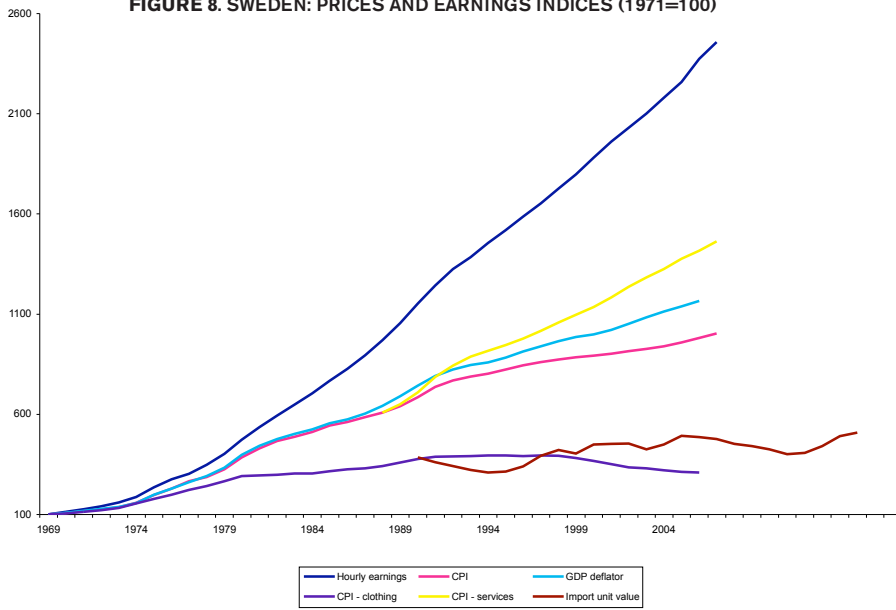
FIGURE 7. FRANCE: PRICES AND EARNINGS INDICES (1970=100)



**Sources:** Earnings and CPI: OECD, Price and Labour database. CPI-Clothing: ILO LABORSTA, Consumer price indices yearly statistics. GDP deflator: World Bank, WDI online database. Import unit value: United Nations Common Database (UNCDB). Own Calculations.

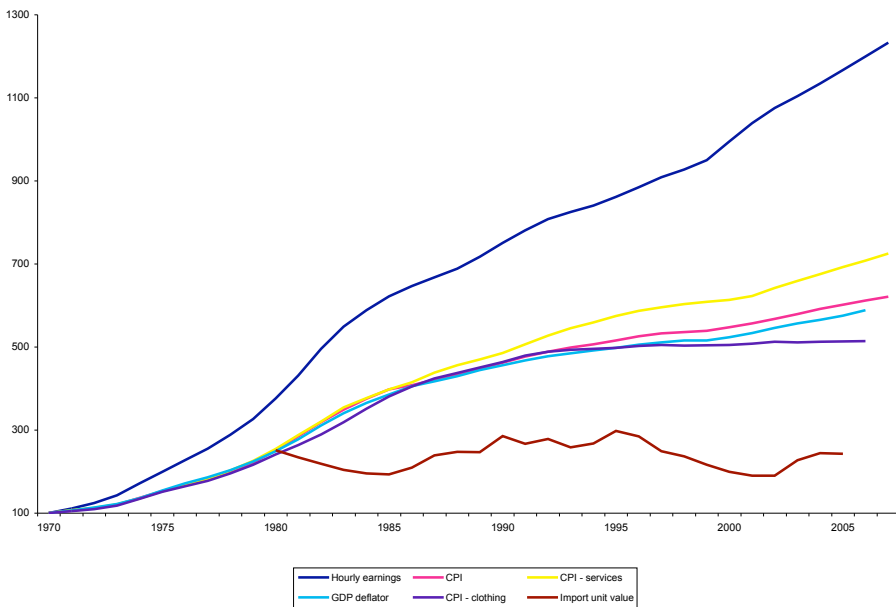


**FIGURE 8. SWEDEN: PRICES AND EARNINGS INDICES (1971=100)**



**Sources:** Earnings and CPI: OECD, Price and Labor database. CPI-Clothing: ILO LABORSTA, Consumer price indices yearly statistics. GDP deflator: World Bank, WDI online database. Import unit value: United Nations Common Database (UNCDB). Own Calculations.

**FIGURE 9. GERMANY: PRICES AND EARNINGS INDICES (1971=100)**



**Sources:** Earnings and CPI: OECD, Price and Labour database. GDP deflator: World Bank, WDI online database. Import unit value: United Nations Common Database (UNCDB). Own Calculations.

for clothing, which is extremely tradable, services (where data is available), which are much less tradable, and a general CPI index. An index of nominal hourly earnings in the manufacturing sector and an index showing the evolution of GDP deflator have been added as points of reference. Not all the data is available even for the four countries. Also, the figures also show an index for import unit value from 1980 onwards. This index has been positioned at the same level of the CPI index (for 1980) to increase comparability. The same is done with services index for the UK, which starts in 1988.

There are some very clear patterns displayed in these figures.

Firstly, the index of nominal hourly earnings in manufacturing is at the top everywhere. Since 1970, nominal wages in France, Sweden, Germany and the UK are much higher than any price index.

Secondly, the price index for services is higher than the general CPI index for the two countries where data is available, namely France and the UK. While the pattern appeared later in France, prices of services in the UK quickly distanced the prices of goods, with an acceleration in recent years. Although the data is not presented here, price indices of services are also available in Germany and Sweden for later years and they show similar patterns. Between 1997 and 2007, the growth in the price of services in Sweden outpaced general CPI growth with 70 percent.

Thirdly, clothing presents a much more stable price evolution, even falling in the most recent years. In the UK and Sweden, the price of clothing was only three times higher in 2006 than in 1970, while other goods seven-folded in Sweden and ten-folded in the UK. Most of this rise had occurred by the end of the 1980s and clothing prices in the UK are actually on a downward slope since the mid-1990s. In France, these patterns appear later, in the mid 1990s.

Fourthly, although the index of import unit value is fluctuating more than other indices,

it remains very low in all countries since 1980. The most striking country is France, where the index actually decreased by 3,3 percent over the period.

The distance between nominal hourly earnings and CPI for goods represents the evolution of the real income of wage earners in time. Inflation under earnings means that real income is rising. If clothing prices and import unit values are an indicator of the impact of globalization on prices, these figures clearly show that openness to trade in goods and services pulls the inflation curve down, proportionately lifting real income. If the level of prices in services is an indicator of what the general level of inflation would look like without trade, the growth of real income in the UK would have been close to zero since 1988.

### COUNTERFACTUAL 1: REAL EARNINGS WITHOUT GLOBALIZATION

How much has globalization affected real earnings or real income? It is impossible to calculate the exact effect. To derive any figure, one has to engage in counterfactual analysis, reflecting, in this case, on what the real income would have been if globalization had not been for real. Such analysis is inherently shaky. Yet they are also informative and can, if cautiously used, convey a good indication of the effect of globalization. So: how would real earnings since 1980 have developed if globalization had been frozen at the 1980 level? Let us describe it in two ways.

Firstly, real earnings can be measured in terms of products instead of money value. In Sweden, one has to work 10 percent more time to afford the same transport services in 2007 as in 1997. However, the average Swede can work 43 percent less time to cover the same room with a carpet. In the UK, one can afford only 92 percent of a haircut in 2007 with the same amount of work than in 1997, but nearly 3 pair of pants instead of only one. The same goes for France, where a night at the restaurants costs 7 percent less work time, while the same shirt costs 27 percent less work time. In Germany, while a night at the restaurant cost nearly the same number of work hours as ten years ago, the telecommunication services can be afforded with 40 percent less work.<sup>17</sup>

Secondly, the impact of globalization on prices can also be aggregated and used to calculate hypothetical real earnings. Table 1 presents such a calculation. It shows real earnings in 1980 and 2005 for our sample of EU countries. Furthermore, it presents the hypothetical real earnings

for 2005, followed by the difference measured in local currencies and in percent.

If France had been closed to imports since 1980, the real hourly earnings would have been 12,99 euro in 2005 instead of the real 16,7 euro. This simple estimation of the effect of imports on real wages suggests that the down pressure of imports on inflation provided a huge part of the real increase in France over the last 25 years. This is true for Sweden, the UK and Germany too, which would respectively have had in 2005 a real hourly earnings 19, 17, and 9 percent lower than the actual one.

**TABLE 1. REAL AND HYPOTHETICAL HOURLY EARNINGS IN MANUFACTURING**

	1980	2005	Hypothetical 2005	Difference	% Difference
France	€12.90	€16.70	€12.99	-€3.71	-22.22%
Sweden	91.90 kr	128.65 kr	104.15 kr	-24.50 kr	-19.04%
UK	£5.81	£11.11	£9.22	-£1.89	-17.01%
Germany	€11.86	€15.60	€14.15	-€1.45	-9.29%

**Sources:** Wages for 2005 from ILO (ISEE for France). Own calculations using CPI and hourly earnings growth from OECD, Share of imports to GDP from World Bank.

**Explanation:** Calculating the price index in which we remove imports, we have used the following calculation:  $(P_i \times \%i) + (P \times (1-\%i)) = CPI$  where  $P_i$  and  $P_h$  are respectively the price level of imports of goods and services and the price level of domestically produced goods and services;  $\%i$  represents the share of imports of goods and services to GDP. Simply, the price influence of imports has been decoupled from the core domestic prices, weighted with the level of imports to GDP. Hourly wages have then been adjusted to the hypothetical level of domestic inflation to estimate what would have been the evolution of real wages without any imports.

### COUNTERFACTUAL II: CONSUMER PRICES WITHOUT GLOBALIZATION

GLOBALIZATION HAS HAD a considerable effect on consumer prices. If the trade and investment integration we have experienced in the post-war era had not taken place, we can be fairly sure that prices would have been considerably higher and that consumers would have had to pay more for less goods.

Table 2 presents an estimate of the approximate effect of globalization on individual consumer prices in our sample of countries. The question the table seeks to answer

**TABLE 2. REAL AND HYPOTHETICAL PRICES IN 2005**

	France			Germany			Sweden			United Kingdom		
	Real price	Adj price	Difference %	Real price	Adj price	Difference %	Real price	Adj price	Difference %	Real price	Adj price	Difference %
Men's Suit	253.40	271.00	-6.50	273.40	592.60	-53.90	268.90	302.30	-11.00	276.50	432.10	-36.00
Bra	17.60	16.30	7.00	22.60	35.60	-36.60	20.30	22.60	-10.20	19.80	25.90	-23.60
Men's Underwear	6.20	5.60	10.70	7.70	12.30	-37.40	7.40	7.90	-6.30	6.80	8.90	-23.60
Washing Liquid	2.50	2.50	0.00	2.90	5.40	-46.30	2.70	2.80	-3.60	3.10	3.90	-20.50
Detergent	3.60	2.70	33.30	3.30	5.90	-44.10	3.40	3.60	-5.50	3.60	4.30	-16.30
Hairspray	3.70	5.50	-32.70	4.10	12.10	-66.10	3.50	6.00	-41.70	3.70	8.80	-57.90
Glasses	6.50	11.60	-43.90	8.80	25.40	-65.40	8.40	12.90	-34.90	8.20	18.50	-55.70
Enamel Paint	8.70	4.60	89.00	9.70	10.10	-4.00	9.80	7.10	38.00	11.20	7.40	51.30
Table Knife	16.20	49.80	-67.50	17.30	108.20	-84.00	17.80	53.20	-66.50	18.20	78.90	-76.90
Kitchen Knife	10.10	7.30	38.30	7.30	16.00	-54.30	7.50	9.90	-24.20	8.70	11.60	-25.00
Hammer	8.50	6.70	26.80	9.60	14.70	-34.70	10.20	7.20	41.70	11.00	10.70	2.80
Ironer	36.60	42.10	-13.10	40.00	87.80	-54.40	40.60	47.40	-14.30	42.10	64.00	-34.20
Vacuum Cleaner	283.40	366.10	-22.60	265.40	800.60	-66.80	269.00	412.30	-34.80	273.40	583.80	-53.20
Refrigerator	291.80	393.20	-25.80	267.00	859.90	-68.90	261.00	498.50	-47.70	294.50	627.00	-53.00
Washing Machine	401.20	1138.90	-64.80	397.30	2490.50	-84.00	406.80	1325.00	-69.30	437.30	1816.00	-75.90
Sewing Machine	368.90	1276.20	-71.10	364.40	2790.70	-86.90	377.20	1472.80	-74.40	376.40	2034.90	-81.50
Light Bulb	0.50	0.80	-37.50	0.70	1.80	-61.10	0.48	0.90	-46.70	0.60	1.30	-53.80
Windsor-style Chair	27.70	27.30	1.40	32.50	59.60	-45.40	30.70	31.80	-3.50	28.60	43.50	-34.30

Sources: Statsics Sweden, ECB, Eurostat, OECD, and national statistical offices in France, Germany, and the UK.

is: what would a sample of goods cost if consumer prices since 1970 had been a function of the domestic price development? Again, in the context of counterfactual analysis we have measured a hypothetical development. All real price effects from imports have been taken out from the index used for calculating the hypothetical price.

This calculation is based on a previous study on price developments in Sweden<sup>18</sup>, but it has been cumbersome to conduct a similar analysis for France, Germany and the United Kingdom. Statistical records of individual consumer prices do not go far back in time and thus we have had to assume that prices in 1970 in these three countries (for the products covered) were the same as the price in Sweden in 1970. That is not likely to be true, but to calculate concrete price developments we needed to start from a base price. Table 2 reports the real price in 2005 and the

hypothetical price (prices in 1970 \* domestic price development from 1970 to 2005).

There are some other methodological problems that also warrant discussion.

Firstly, we have collected real price data from 1970 for product categories. The 1970 prices are for Sweden. The real prices for similar goods in 2005 were collected for each country. When collecting the prices for comparable goods in 2005, we have chosen individual products of slightly higher "standard" than the goods from 1970. This has been done in order to avoid an overestimation of the price effect.<sup>19</sup> For example, if we had used the 2005 price of a men suit from low-price H&M, the effect would have been even greater.

Secondly, there are no good price indices describing the

*domestic* price development for the consumer. Some of the standard indices on domestic prices have methodological weaknesses, such as the GDP deflator or the producer price index, while others cannot be used for comparative analysis. Therefore we have calculated an adjusted consumer price index.<sup>20</sup>

Thirdly, this calculation has its methodological weaknesses, as all counterfactual calculations. The chief purpose of the calculation is not to provide an exact estimate on what the price of a good would be if globalization had frozen at the 1970 level, but to give an indication on the size of the price difference.

Table 2 displays remarkable differences between actual and hypothetical prices in 2005. There are differences between countries – France exhibit smaller differences than the other countries – and between goods – capital goods would generally have been much higher if globalization has frozen at the 1970 level. Some prices would actually have been lower, and these generally are for goods with a high commodity value. The difference in prices for a vacuum cleaner is 67 percent in Germany and 53 percent in the UK. The price difference for a refrigerator is 48 percent in Sweden and 26 percent in France. Price developments such as these have had a remarkable effect on consumers and real income. Consumers today get more for their money. The income effect from disinflation has overall been higher than the income effect from increasing wages.

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### Databases

- European Commission, EUROSTAT, Economy and Finance database (Prices)
- [http://epp.eurostat.ec.europa.eu/portal/page?\\_pageid=1090,30070682,1090\\_33076576&dad=portal&schema=PORTAL](http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1090,30070682,1090_33076576&dad=portal&schema=PORTAL)
- ILO Bureau of Statistics, LABORSTA Internet database. <http://laborsta.ilo.org/>
- International Monetary Fund (IMF), World Economic Outlook (WEO) databases. <http://www.imf.org/external/ns/cs.aspx?id=28>
- OECD, SourceOECD online database, Main Economic Indicators (MEI) obtained in the Price and Purchasing Power database and the Labor database. <http://stats.oecd.org>

- World Bank, World Development Indicators (WDI) online database. <https://publications.worldbank.org/register/WDI?return%5furl=%2fex%2fsubscripti%2fons%2fWDI%2f>
- United Nations Common Database (UNCDB). [http://unstats.un.org/unsd/cdb/cdb\\_help/cdb\\_quick\\_start.asp](http://unstats.un.org/unsd/cdb/cdb_help/cdb_quick_start.asp)

dard, annual CPI's have been cleaned by using the annual import value index from the OECD for each country, adjusted for the import penetration.

## FOOTNOTES

1. This paper was presented at a seminar at Electrolux's headquarters in Stockholm during the annual meeting of the International Chamber of Commerce (ICC). Financial support from the ICC-CN70 Foundation and Electrolux is gratefully acknowledged. Erik van der Marel and Pierre-Olivier Legault Tremblay have provided excellent research assistance for this paper.
2. Krugman (1997).
3. The companies in the top-50 league in 2007 were Toyota Motor, Honda Motor, Nippon Telegraph & Telephone, and Nissan Motor. For the full ranking, see Fortune (2007).
4. Data retrieved from the US Bureau of Economic Analysis and the US Bureau of Labor Statistics.
5. Backhaus et al (2008).
6. International Herald Tribune (2005).
7. UNCTAD (2007).
8. EPI (2003).
9. For references to these studies, see Irwin (2002), chapter 3.
10. Berman et al (1994); Lawrence (2008).
11. See Bhagwati & Kusters (1994); Feenstra & Hanson (1999); Goldin & Katz (2007); Lawrence (2008).
12. Reynolds (2007).
13. See Lawrence (2008).
14. Rogoff (2003). See also Pehnelt (2007) for a thorough discussion on globalization and inflation.
15. See Lawrence (2008) and Sullivan (1997).
16. Broda & Romalis (2008).
17. Own calculations using specific price data from Eurostat and hourly earnings data from the OECD.
18. Erixon & Lewander (2005).
19. The list of goods chosen in 2005 can be retrieved from the author.
20. The adjusted CPI is the CPI cleaned from import. Stan-

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