

## ***Comparison of Spain's Annual Unit Labour Cost in Manufacturing as Compiled by the OECD and the US Bureau of Labor Statistics***

### **Introduction**

Annual Unit Labour Costs (ULCs) are calculated as the quotient of total labour costs and real output. In February 2007, the United States Bureau of Labor Statistics (BLS) released an annual estimate for unit labour costs in manufacturing for Spain. The box below mentioning this first release is extracted from the following BLS news release as of February 22, 2007:

<http://www.bls.gov/news.release/pdf/prod4.pdf>.

#### **Spain**

With this news release, Spain becomes the sixteenth economy included in the BLS international comparisons of manufacturing productivity and unit labor costs. The main source of Spain's economic data is Spain's National Statistics Institute. The data comply with international standards of national accounts and industrial classification. Current and constant price output series are available from 1964 forward. Employment, hours, and compensation data are available from 1979 forward.

Soon after the BLS, in March 2007, the OECD commenced publication of an annual ULC in manufacturing for Spain. Early in 2007 David Brackfield (Short Term Economic Statistics, OECD) wrote a preliminary OECD-BLS comparison paper comparing the then (excluding Spain) 14 overlapping countries between the BLS and OECD programs for annual manufacturing ULCs (<http://www.oecd.org/dataoecd/32/29/38643335.pdf>). The purpose of this short note is to complement this previous comparison with the addition of Spain.

### **Analysis**

#### **OECD-BLS comparison of Spain's annual ULC in manufacturing**

For Spain, the two annual ULCs in manufacturing have nearly the same length (1978-2005 for the OECD ULC and 1979-2005 for the BLS ULC) and their main data source is Spain's National Statistical Institute (Instituto Nacional de Estadística – INE). The base year for the BLS ULC indexes are 1992=100 while the OECD ULC uses a base year of 2000=100. To perform the comparison, the BLS ULC index has been rebased to 2000=100.

The correlation of the ULC indexes (0.990) is high but the correlation of the year-on-year growth rates (0.870) are somewhat lower. However, as one can see from Chart 1 (Annex), there is a clear point where the two ULCs separate: 2000. For Spain, 2000 is a link date of the self-employment ratio for the OECD compiled ULC indexes. From 1995, the self-employment ratio is based on Hours and linked prior to 1995 to a self-employment ratio based on employment in Persons. The year 2000 is also a link period as a previous version of Hours data is linked to the most recent version of Hours data, which only starts in 2000, from the OECD Annual National Accounts database.

The BLS manufacturing ULC index is entirely based on Total Hours worked in manufacturing, right back to 1979. For all years except 1994, 1998 and 1999, the growth rates of the BLS and OECD ULC indices are of the same signs and they are reasonably close from 1986 to 1997 and from 2001 (see Chart 2).

Furthermore, some of the differences may be due to the additional adjustments made by the BLS for employment taxes and government subsidies whereas the OECD does not make any adjustments for these factors. Finally, the discrepancies occurring in the historical parts of the time series may be explained by the use of different vintages of series published by OECD and BLS to extend the time series and / or linking methodologies used to join these respective series.

## Conclusion

The original comparison paper was sent to the BLS for comments which were subsequently incorporated into the paper, with the final version being placed on the OECD System of Unit Labour Cost and Related Indicators website. The disappointing correlations for the Spanish series seem to reinforce most of the points that have already been highlighted, namely:

1. Link point – in virtually every country with lower correlations, there was a certain period where the two series came apart and this was almost always at an OECD data link point. This then feeds directly into point 2, and to a lesser extent point 3;
2. Data vintage – there is really no way to confirm that the BLS and the OECD use the same vintage of data for the previous periods. A good example of this is on the first page of this paper where the BLS state: “Current and constant price output series are available from 1964 forward.” However, the OECD Annual National Accounts (SNA) database only has Spanish manufacturing output data from 1995 with this data being sourced directly from INE, which is also the BLS source. Through using the OECD STAN database further data to 1980 has been sourced, yet this is still 16 years short of the BLS data. The question is then how can the OECD data from 1980-1995 and the BLS data from 1964-1995 be confirmed as actually covering the same activity? This then feeds directly into ULC differences.
3. Employment data – This has proven to be another cause of differences between the OECD and BLS ULC series. In the case of Spain, the OECD can only source Hours data from SNA from 1995 (linking two versions), yet the BLS state that they have Hours data for manufacturing from 1979, again both sources are listed as INE. The periods around 1995 and 2000 are the primary causes of the poor growth correlation seen for Spain and this is where the OECD links the current Hours series to a former Hours series which is then linked at 1995 to Persons data.

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## Annex 1

Chart 1: Annual manufacturing ULC indexes for Spain OECD and BLS (correlation: 0.99).

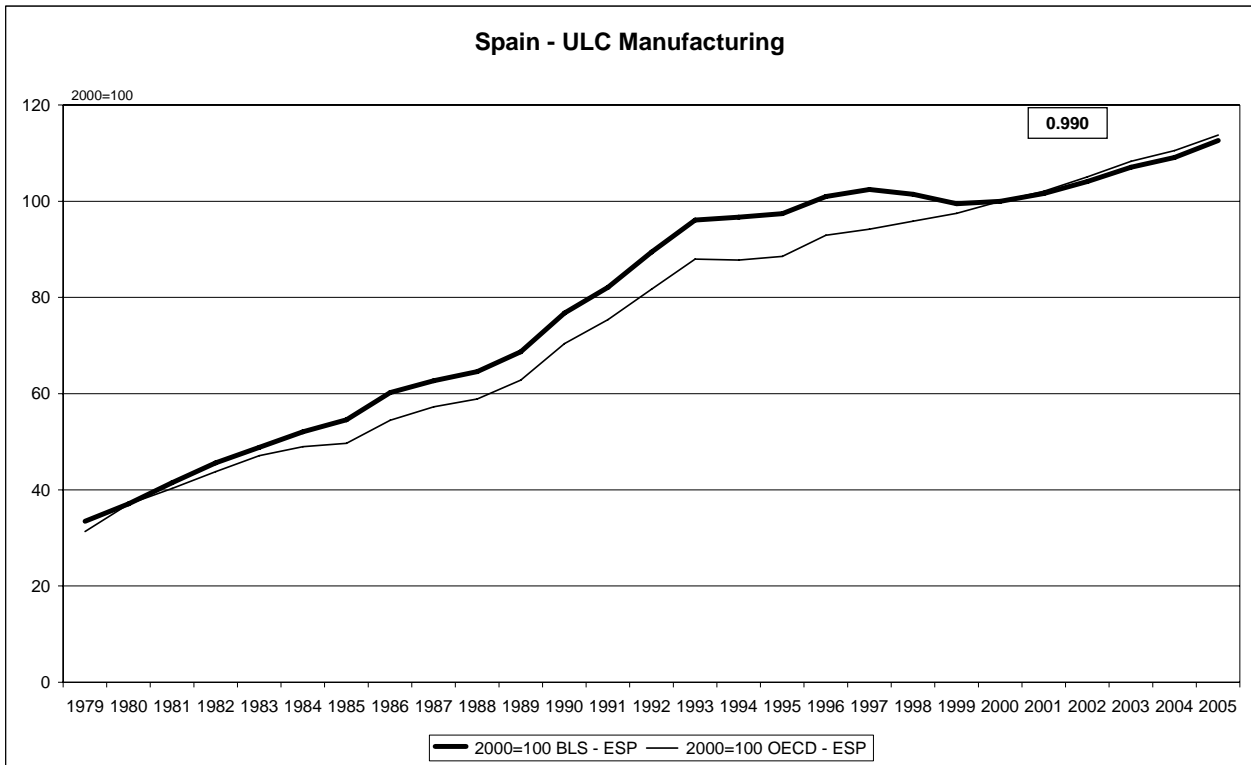
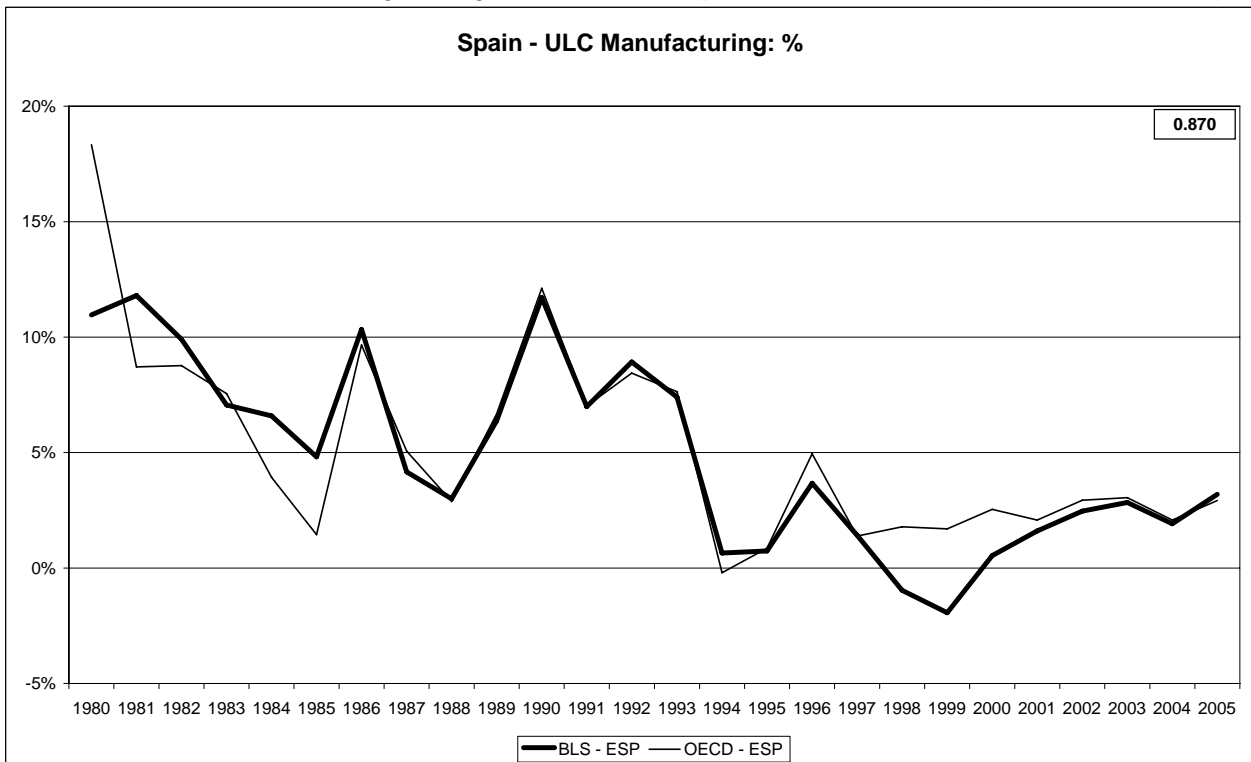


Chart 2: Annual manufacturing ULC growth rates for Spain OECD and BLS (correlation: 0.871).



## Annex 2

### OECD data sources for Spain's annual ULC in manufacturing

The following table provides information containing the source of data and the start, end and last update dates for the components of the OECD annual ULC in manufacturing. In the table SNA is an acronym for the OECD's annual national accounts database. All the SNA OECD data are sourced from Spain's National Statistical Institute (INE). Dates in brackets imply that the current time series have been linked to historical data previously provided to the OECD (or sourced by the OECD) in order to extend the length of the time series used in the ULC compilation.

**Table 1. Sources**

<b>UNIT LABOUR COSTS (ULC) FOR SPAIN - SOURCE DATA</b>			
<b>Annual ULC</b>	<b>Manufacturing</b>	<b>End date</b>	<b>Update date</b>
<i>Compensation of Employees</i>	SNA 2000 (1995) (1978)	2005	02 February 2007
<i>Value Added Current Prices</i>	SNA 2000 (1995) (1980)	2005	02 February 2007
<i>Value Added Constant Prices</i>	SNA 2000 (1995) (1980)	2005	30 August 2007
<i>Self-employed ratio:</i>			
<i>Hours - Employed</i>	SNA 2000 (1995)	2005	03 May 2007
<i>Hours - Employees</i>	SNA 2000 (1995)	2005	03 May 2007
<i>Persons - Employed</i>	SNA 1995 (1985)	2005	05 March 2007
<i>Persons - Employees</i>	SNA 1995 (1985)	2005	05 March 2007

**Table 2. Data**

**Annual Unit labor costs in manufacturing, national currency basis, Spain, 1979-2005**

Period	BLS: ULC Index	BLS: ULC Index	OECD: ULC Index	BLS: ULC Growth rate	OECD: ULC Growth rate
	1992=100 ESP BLS	2000=100 BLS - ESP	2000=100 OECD - ESP	BLS - ESP	OECD - ESP
1979	37.4	33.45	31.31		
1980	41.5	37.12	37.05	10.96%	18.33%
1981	46.4	41.50	40.28	11.81%	8.72%
1982	51	45.62	43.81	9.91%	8.76%
1983	54.6	48.84	47.12	7.06%	7.56%
1984	58.2	52.06	48.97	6.59%	3.93%
1985	61	54.56	49.68	4.81%	1.45%
1986	67.3	60.20	54.48	10.33%	9.66%
1987	70.1	62.70	57.24	4.16%	5.07%
1988	72.2	64.58	58.89	3.00%	2.88%
1989	76.8	68.69	62.82	6.37%	6.67%
1990	85.8	76.74	70.43	11.72%	12.11%
1991	91.8	82.11	75.37	6.99%	7.01%
1992	100	89.45	81.73	8.93%	8.44%
1993	107.4	96.06	87.97	7.40%	7.63%
1994	108.1	96.69	87.79	0.65%	-0.20%
1995	108.9	97.41	88.54	0.74%	0.85%
1996	112.9	100.98	92.92	3.67%	4.95%
1997	114.5	102.42	94.21	1.42%	1.39%
1998	113.4	101.43	95.89	-0.96%	1.78%
1999	111.2	99.46	97.52	-1.94%	1.70%
2000	111.8	100.00	100	0.54%	2.54%
2001	113.6	101.61	102.08	1.61%	2.08%
2002	116.4	104.11	105.08	2.46%	2.94%
2003	119.7	107.07	108.28	2.84%	3.05%
2004	122	109.12	110.53	1.92%	2.08%
2005	125.9	112.61	113.76	3.20%	2.92%
<b>CORRELATIONS OECD vs BLS</b>					
ULC Indices		ULC Growth rates			
<b>0.990</b>		<b>0.870</b>			