



I O L W  
INTERNATIONAL OBSERVATORY  
OF LIVING WAGES

A Collaborative Research Project



Table-T5: Living-Wage-Gap and Equalisation analysis (vis-à-vis the U.S.) for selected European economies – for all employed in the manufacturing sector– in PPP for private consumption terms 1996-2017, based on the methodology of Jus Semper’s “The Living Wages North and South Initiative (TLWNSI)”, following the principle of “Equal pay for equal work of equal value” of UN and ILO’s international conventions.

**2017 is the first year in the 22-year span in this report that US hourly wage rates dropped (0,9%). This enabled the vast majority of countries to reduce their comparative wage gaps or increase their surpluses in their manufacturing wage Eq-Index. Most European economies improved their living-wage equalisation position very meaningfully.**

- Practically all European economies improved their living wage equalisation index (Eq-Idx) with equivalent US workers as a result of the combination of: (1) significant increases in the hourly compensation wage rate in local currency (averaging 6%), (2) little change in their PPP for private consumption cost of living (averaging 0,1%), (3) some revaluation of their currencies against the dollar (averaging 1%) and (4) the drop of almost 1% of the US hourly rate. In fact, of the 28 economies in this report, 24 improved their Eq-Idx, some of them very significantly, This resulted in a 7,1% average increase in the hourly rate in US dollars. Finland did not change its index and only Italy, Greece and Estonia lost one point in their Eq-Idx.
- Among the 16 euro-zone economies, 12 increased their Eq-Idx, Finland did not change and Italy, Greece and Estonia lost one point. The combination of the same variables described above for all Europe drew similar results in euro-zone countries: (1) a meaningful increase in the hourly compensation wage rate in local currency (averaging 3,6%), (2) little change in their PPP for private consumption cost of living (averaging 0,5%), (3) significant revaluation of the euro against the dollar of 1,9% and (4) the drop of almost 1% of the US hourly rate. This resulted in an 5,8% increase in the hourly rate in US dollars. Some economies experienced extremely strong increases of the hourly rate in local currency. Ireland recorded the strongest increase at 23% —which translated into a 25,2% increase of its hourly rate in US dollars and on its Eq-Idx, or 21 point gain, from 83 to 104— followed by Lithuania at 12,8%, Latvia at 9,1% and the Netherlands at 7,6%. Even France and Germany, despite a drop or no change in the hourly rate in euros, with no change in their PPP, the euro revaluation and the drop of the US hourly rate, increased their Eq-idx by one and three points respectively. Only Estonia, Greece and Italy increased their gap (with no change for Finland) because of a drop of their hourly rates in euros, averaging 3,8%.
- Among Eastern European economies, including the euro-zone economies of Estonia, Latvia, Lithuania, Slovakia and Slovenia, a marked improvement in their Eq-Idx is evident, once again as a result of the combination of the same variables with the same behavior: (1) a strong increase in the hourly compensation wage rate in local currency (averaging 10,2%), (2) little change in their PPP for private consumption cost of living (averaging 0,85%), (3) slight revaluation of their currencies against the dollar of 0,7% and (4) the drop of almost 1% of the US hourly rate. This resulted in a strong 10,4% increase in the hourly rate in US dollars. If we exclude the euro-zone economies in Eastern Europe, the gains are even stronger on average for Bulgaria, Croatia, Czech Republic, Poland, Romania and Turkey, with a 13,5% average increase of their hourly rates in local currencies, a 12,5% average increase in US dollars and, excluding Turkey, a 2,5% of their PPP cost of living and an average revaluation of their exchange rates of 2,7%, plus the drop of the US hourly rate. In the case of Turkey, it recorded a steep devaluation of its currency of 17,2%, prompting a 10,2% decrease of its PPP cost of living in US dollars. But a rather strong increase of 41% of its hourly rate in local currency was enough to increase its hourly rate in US dollars by 16,8%, only second to Ireland’s. This resulted in a powerful gain of 9 points in its Eq-idx from 2016 to a 39 index.
- In the United Kingdom, the substantial devaluation of the pound (4,7%) with a consequential drop of its PPP cost of living of 5,6%, a 2,3% increase of its hourly rate in local currency and the drop of the US hourly rate, enabled it to gain 4 points in its Eq-Idx —to 75— despite a drop of 1,5% of its hourly rate in US dollars. As for Switzerland, the combination of the drop of the US hourly rate, no change of its exchange rate and a 2,2% drop in cost of living, rendered a 4 point gain in its Eq-Idx, to 112, despite no change of its hourly rate in local currency.
- Scandinavia, including euro zone Finland, also did very well, averaging 6% and a 6-point increase in their Eq-Idx (8% and 8 points without Finland), This is the result of an average increase of 3% (5% without Finland) of its hourly rate in local currency, a 1,4% currency revaluation average (1,2% excluding Finland), a minimum change in the average PPP cost of living, a 4,4% average increase of its hourly rate in US dollars (6,3% excluding Finland) and the drop of the US hourly rate.
- Overall, the 28 European economies included in this report increased their hourly rate in US dollars by a strong 7,1% average, which rendered an average gain of 5 points in their equalisation indices with their US counterparts from 2016 and an average gain of 14 points since 1996, equivalent to a 24,2% Eq-Idx increase average. Most are on a recovery trend of their Eq-Idx after a slump between 2008 and 2012. Only Finland, Italy, Estonia and Greece are not yet recovering, with Greece still in a clearly downward trend and with the worst performance, albeit Romania and Bulgaria have the widest living-wage gaps in the region.

	1996	2000	2002	2004	2006	2008	2010	2012	2014	2016	2017
<b>(PPP conversion factor for private consumption)</b>											
<b>Benchmark</b>	<b>1. U.S. Hourly Manufacturing Wage Rate*</b>										
	<small>(Hourly compensation costs)</small>										
<b>Germany</b>	PPP conversion factor (country currency x \$1)										
	Exchange rate										
	PPP conversion factor (in U.S. dollars)										
	2. Equalised PPP nominal wage rate US \$										
	3. Actual PPP Real wage rate US \$										
	4. Actual Nominal wage rate US \$										
	Compensation Deficit in US \$ (2 minus 4)										
	Wage Equalisation index (4÷2 or 3÷1)										
<b>United Kingdom</b>	PPP conversion factor (country currency x \$1)										
	Exchange rate										
	PPP conversion factor (in U.S. dollars)										
	2. Equalised PPP nominal wage rate US \$										
	3. Actual PPP Real wage rate US \$										
	4. Actual Nominal wage rate US \$										
	Compensation Deficit in US \$ (2 minus 4)										
	Wage Equalisation index (4÷2 or 3÷1)										
<b>France</b>	PPP conversion factor (country currency x \$1)										
	Exchange rate										
	PPP conversion factor (in U.S. dollars)										
	2. Equalised PPP nominal wage rate US \$										
	3. Actual PPP Real wage rate US \$										
	4. Actual Nominal wage rate US \$										
	Compensation Deficit in US \$ (2 minus 4)										
	Wage Equalisation index (4÷2 or 3÷1)										
<b>Italy</b>	PPP conversion factor (country currency x \$1)										
	Exchange rate										
	PPP conversion factor (in U.S. dollars)										
	2. Equalised PPP nominal wage rate US \$										
	3. Actual PPP Real wage rate US \$										
	4. Actual Nominal wage rate US \$										
	Compensation Deficit in US \$ (2 minus 4)										
	Wage Equalisation index (4÷2 or 3÷1)										
<b>Spain</b>	PPP conversion factor (country currency x \$1)										
	Exchange rate										
	PPP conversion factor (in U.S. dollars)										
	2. Equalised PPP nominal wage rate US \$										
	3. Actual PPP Real wage rate US \$										
	4. Actual Nominal wage rate US \$										
	Compensation Deficit in US \$ (2 minus 4)										
	Wage Equalisation index (4÷2 or 3÷1)										

	1996	2000	2002	2004	2006	2008	2010	2012	2014	2016	2017
<b>(PPP conversion factor for private consumption)</b>											
<b>Benchmark</b>	<b>1. U.S. Hourly Manufacturing Wage Rate*</b>										
	<small>(Hourly compensation costs)</small>										
<b>Netherlands**</b>	PPP conversion factor (country currency x \$1)										
	Exchange rate										
	PPP conversion factor (in U.S. dollars)										
	2. Equalised PPP nominal wage rate US \$										
	3. Actual PPP Real wage rate US \$										
	4. Actual Nominal wage rate US \$										
	Compensation Deficit in US \$ (2 minus 4)										
	Wage Equalisation index (4÷2 or 3÷1)										
<b>Belgium</b>	PPP conversion factor (country currency x \$1)										
	Exchange rate										
	PPP conversion factor (in U.S. dollars)										
	2. Equalised PPP nominal wage rate US \$										
	3. Actual PPP Real wage rate US \$										
	4. Actual Nominal wage rate US \$										
	Compensation Deficit in US \$ (2 minus 4)										
	Wage Equalisation index (4÷2 or 3÷1)										
<b>Sweden</b>	PPP conversion factor (country currency x \$1)										
	Exchange rate										
	PPP conversion factor (in U.S. dollars)										
	2. Equalised PPP nominal wage rate US \$										
	3. Actual PPP Real wage rate US \$										
	4. Actual Nominal wage rate US \$										
	Compensation Deficit in US \$ (2 minus 4)										
	Wage Equalisation index (4÷2 or 3÷1)										
<b>Switzerland</b>	PPP conversion factor (country currency x \$1)										
	Exchange rate										
	PPP conversion factor (in U.S. dollars)										
	2. Equalised PPP nominal wage rate US \$										
	3. Actual PPP Real wage rate US \$										
	4. Actual Nominal wage rate US \$										
	Compensation Deficit in US \$ (2 minus 4)										
	Wage Equalisation index (4÷2 or 3÷1)										
<b>Norway**</b>	PPP conversion factor (country currency x \$1)										
	Exchange rate										
	PPP conversion factor (in U.S. dollars)										
	2. Equalised PPP nominal wage rate US \$										
	3. Actual PPP Real wage rate US \$										
	4. Actual Nominal wage rate US \$										
	Compensation Deficit in US \$ (2 minus 4)										
	Wage Equalisation index (4÷2 or 3÷1)										

	1996	2000	2002	2004	2006	2008	2010	2012	2014	2016	2017
<b>(PPP conversion factor for private consumption)</b>											
<b>Benchmark</b>	<b>22,46</b>	<b>24,95</b>	<b>27,35</b>	<b>28,59</b>	<b>30,77</b>	<b>32,26</b>	<b>32,61</b>	<b>34,05</b>	<b>37,23</b>	<b>39,73</b>	<b>39,36</b>
<b>1. U.S. Hourly Manufacturing Wage Rate*</b> (Hourly compensation costs)											
<b>Austria</b>	13,027	0,909	0,912	0,894	0,879	0,872	0,857	0,856	0,846	0,845	0,840
PPP conversion factor (country currency x \$1)	10,5890	1,0854	1,0626	0,8054	0,7971	0,6827	0,7550	0,7783	0,7537	0,9040	0,8874
Exchange rate	US\$ 1,23	US\$ 0,84	US\$ 0,86	US\$ 1,11	US\$ 1,10	US\$ 1,28	US\$ 1,14	US\$ 1,10	US\$ 1,12	US\$ 0,93	US\$ 0,95
PPP conversion factor (in U.S. dollars)	US\$ 27,63	US\$ 20,90	US\$ 23,47	US\$ 31,73	US\$ 33,91	US\$ 41,21	US\$ 37,01	US\$ 37,44	US\$ 41,77	US\$ 37,14	US\$ 37,25
2. Equalised PPP nominal wage rate US \$	US\$ 22,83	US\$ 26,15	US\$ 27,09	US\$ 28,01	US\$ 30,43	US\$ 33,33	US\$ 35,29	US\$ 38,04	US\$ 40,66	US\$ 42,30	US\$ 45,01
3. Actual PPP Real wage rate US \$	US\$ 28,09	US\$ 21,90	US\$ 23,25	US\$ 31,08	US\$ 33,54	US\$ 42,58	US\$ 40,06	US\$ 41,83	US\$ 45,62	US\$ 39,54	US\$ 42,60
4. Actual Nominal wage rate US \$	US\$ (0,46)	US\$ (1,00)	US\$ 0,22	US\$ 0,65	US\$ 0,37	US\$ (1,27)	US\$ (2,05)	US\$ (4,39)	US\$ (3,85)	US\$ (2,40)	US\$ (5,35)
Compensation Deficit in US \$ (2 minus 4)	1,02	1,05	0,99	0,88	0,89	1,02	1,03	1,12	1,09	1,06	1,14
Wage Equalisation index (4÷2 or 3÷1)											
<b>Denmark**</b>	8,932	8,914	9,082	8,980	8,865	8,546	8,387	8,408	8,282	8,325	7,990
PPP conversion factor (country currency x \$1)	6,6044	8,0831	7,8947	5,9911	5,9468	5,0981	5,6241	5,7925	5,6125	6,7317	6,6029
Exchange rate	US\$ 1,35	US\$ 1,10	US\$ 1,15	US\$ 1,50	US\$ 1,49	US\$ 1,68	US\$ 1,49	US\$ 1,45	US\$ 1,48	US\$ 1,24	US\$ 1,21
PPP conversion factor (in U.S. dollars)	US\$ 31,16	US\$ 27,51	US\$ 31,46	US\$ 42,85	US\$ 45,87	US\$ 54,07	US\$ 48,63	US\$ 49,43	US\$ 54,94	US\$ 49,13	US\$ 47,63
2. Equalised PPP nominal wage rate US \$	US\$ 17,54	US\$ 20,17	US\$ 22,10	US\$ 23,79	US\$ 25,63	US\$ 29,60	US\$ 32,43	US\$ 33,96	US\$ 35,81	US\$ 36,65	US\$ 38,85
3. Actual PPP Real wage rate US \$	US\$ 23,72	US\$ 22,24	US\$ 25,42	US\$ 35,66	US\$ 38,20	US\$ 49,61	US\$ 48,36	US\$ 49,29	US\$ 52,85	US\$ 45,32	US\$ 47,01
4. Actual Nominal wage rate US \$	US\$ 7,44	US\$ 5,27	US\$ 6,04	US\$ 7,19	US\$ 7,67	US\$ 4,46	US\$ 0,27	US\$ 0,14	US\$ 2,09	US\$ 3,81	US\$ 0,62
Compensation Deficit in US \$ (2 minus 4)	0,76	0,84	0,81	0,82	0,82	0,82	0,89	1,00	0,86	0,82	0,89
Wage Equalisation index (4÷2 or 3÷1)											
<b>Finland</b>	6,465	1,072	1,091	1,064	1,045	0,992	0,979	0,990	0,978	0,965	0,947
PPP conversion factor (country currency x \$1)	4,5936	1,0854	1,0626	0,8054	0,7971	0,6827	0,7550	0,7783	0,7537	0,9040	0,8874
Exchange rate	US\$ 1,41	US\$ 0,99	US\$ 1,03	US\$ 1,32	US\$ 1,31	US\$ 1,45	US\$ 1,30	US\$ 1,27	US\$ 1,30	US\$ 1,07	US\$ 1,07
PPP conversion factor (in U.S. dollars)	US\$ 31,61	US\$ 24,65	US\$ 28,07	US\$ 37,75	US\$ 40,34	US\$ 46,89	US\$ 42,29	US\$ 43,33	US\$ 48,33	US\$ 42,43	US\$ 42,00
2. Equalised PPP nominal wage rate US \$	US\$ 17,77	US\$ 20,07	US\$ 21,94	US\$ 24,54	US\$ 26,81	US\$ 30,01	US\$ 31,11	US\$ 33,01	US\$ 34,69	US\$ 36,26	US\$ 35,81
3. Actual PPP Real wage rate US \$	US\$ 25,01	US\$ 19,83	US\$ 22,52	US\$ 32,41	US\$ 35,15	US\$ 43,62	US\$ 40,35	US\$ 42,01	US\$ 45,03	US\$ 38,72	US\$ 38,21
4. Actual Nominal wage rate US \$	US\$ 6,60	US\$ 4,82	US\$ 5,55	US\$ 5,34	US\$ 5,19	US\$ 3,27	US\$ 1,94	US\$ 1,32	US\$ 3,30	US\$ 3,71	US\$ 3,79
Compensation Deficit in US \$ (2 minus 4)	0,79	0,80	0,80	0,86	0,87	0,93	0,95	0,97	0,93	0,91	0,91
Wage Equalisation index (4÷2 or 3÷1)											
<b>Ireland</b>	0,702	1,006	1,073	1,067	1,064	1,072	0,966	0,965	0,990	0,992	0,984
PPP conversion factor (country currency x \$1)	0,6248	1,0854	1,0626	0,8054	0,7971	0,6827	0,7550	0,7783	0,7537	0,9040	0,8874
Exchange rate	US\$ 1,12	US\$ 0,93	US\$ 1,01	US\$ 1,32	US\$ 1,33	US\$ 1,57	US\$ 1,28	US\$ 1,24	US\$ 1,31	US\$ 1,10	US\$ 1,11
PPP conversion factor (in U.S. dollars)	US\$ 25,23	US\$ 23,13	US\$ 27,62	US\$ 37,88	US\$ 41,07	US\$ 50,67	US\$ 41,73	US\$ 42,23	US\$ 48,88	US\$ 43,59	US\$ 43,63
2. Equalised PPP nominal wage rate US \$	US\$ 15,70	US\$ 17,69	US\$ 19,41	US\$ 21,35	US\$ 23,66	US\$ 26,62	US\$ 31,81	US\$ 32,83	US\$ 33,08	US\$ 33,03	US\$ 40,95
3. Actual PPP Real wage rate US \$	US\$ 17,64	US\$ 16,40	US\$ 19,60	US\$ 28,28	US\$ 31,58	US\$ 41,82	US\$ 40,71	US\$ 40,72	US\$ 43,43	US\$ 36,23	US\$ 45,39
4. Actual Nominal wage rate US \$	US\$ 7,59	US\$ 6,73	US\$ 8,02	US\$ 9,60	US\$ 9,49	US\$ 8,85	US\$ 1,02	US\$ 1,51	US\$ 5,45	US\$ 7,36	US\$ (1,76)
Compensation Deficit in US \$ (2 minus 4)	0,70	0,71	0,71	0,75	0,77	0,83	0,98	0,96	0,89	0,83	1,04
Wage Equalisation index (4÷2 or 3÷1)											
<b>Portugal</b>	134,671	0,700	0,722	0,715	0,698	0,715	0,700	0,689	0,667	0,670	0,665
PPP conversion factor (country currency x \$1)	154,2800	1,0854	1,0626	0,8054	0,7971	0,6827	0,7550	0,7783	0,7537	0,9040	0,8874
Exchange rate	US\$ 0,87	US\$ 0,64	US\$ 0,68	US\$ 0,89	US\$ 0,88	US\$ 1,05	US\$ 0,93	US\$ 0,89	US\$ 0,89	US\$ 0,74	US\$ 0,75
PPP conversion factor (in U.S. dollars)	US\$ 19,61	US\$ 16,09	US\$ 18,58	US\$ 25,39	US\$ 26,95	US\$ 33,78	US\$ 30,24	US\$ 30,16	US\$ 32,96	US\$ 29,44	US\$ 29,50
2. Equalised PPP nominal wage rate US \$	US\$ 8,13	US\$ 9,15	US\$ 9,79	US\$ 10,36	US\$ 11,33	US\$ 11,92	US\$ 12,94	US\$ 13,99	US\$ 14,32	US\$ 14,79	US\$ 14,98
3. Actual PPP Real wage rate US \$	US\$ 7,10	US\$ 5,90	US\$ 6,65	US\$ 9,20	US\$ 9,92	US\$ 12,48	US\$ 12,00	US\$ 12,39	US\$ 12,68	US\$ 10,96	US\$ 11,23
4. Actual Nominal wage rate US \$	US\$ 12,51	US\$ 10,19	US\$ 11,93	US\$ 16,19	US\$ 17,03	US\$ 21,30	US\$ 18,24	US\$ 17,77	US\$ 20,28	US\$ 18,48	US\$ 18,27
Compensation Deficit in US \$ (2 minus 4)	0,36	0,37	0,36	0,36	0,37	0,37	0,40	0,41	0,38	0,37	0,38
Wage Equalisation index (4÷2 or 3÷1)											

**\*Definitions:**

- PPPs stands for Purchasing-Power Parities, which reflect the currency units in a given currency that are required to buy the same goods and services that can be purchased in the base country with one currency unit. This analysis uses the U.S. and the U.S. dollar as the benchmark and assumes that the U.S. wage is a living wage.
- The hourly manufacturing wage rate is the "hourly compensation cost" as defined by the U.S. Department of Labour, Bureau of Labour Statistics: This includes (1) hourly direct pay and (2) employer social insurance expenditures and other labour taxes. Hourly direct pay includes all payments made directly to the worker, before payroll deductions of any kind, consisting of pay for time worked and other direct pay. Social insurance expenditures and other labour taxes refers to the value of social contributions incurred by employers in order to secure entitlement to social benefits for their employees.
- PPP conversion factor, (private consumption) in country currency express the number of country currency units required to buy the same goods and services a U.S. dollar can buy in the U.S.
- Exchange rate is nominal exchange rate.
- PPP conversion factor, private consumption in U.S. dollars expresses the U.S. dollar units required in a given country to buy the same goods and services a U.S. dollar can buy in the U.S. If the PPP is less than 1, a U.S. dollar can buy more in the country in question because the cost of living is lower, and viceversa.
- The PPP for private consumption, expressed in national currency, reflects the exchange rate in comparison with the market exchange rate, which does not reflect the ratio of prices.
- Equalised PPP nominal wage rate is the hourly U.S. dollar nominal rate required to equally compensate a worker in a country, in purchasing power terms, for equal work rendered, as the equivalent U.S. worker is compensated. This analysis assumes the U.S. wage to be a living-wage. A living wage is a human right in accordance with Article 23 of the UN Universal Declaration of Human Rights. ILO's Convention 100 of "equal pay for equal work", for men and women is hereby applied in a global context.
- Actual PPP Real wage rate is the hourly wage paid in a given country in purchasing power terms.
- Actual Nominal wage rate is the nominal hourly wage paid in a given country.
- Compensation deficit expresses the wage gap between the hourly nominal wage rate paid (4) and the equalised PPP hourly rate that should be paid for equal work (2).
- Compensation equalisation index expresses the ratio of actual nominal pay to equalised PPP hourly pay (4 between 2); or the ratio of actual real pay (3) to the hourly nominal pay benchmark (1) (3 between 1).
- \*India and China data gathered by the BLS and TCB are not fully comparable to the rest of countries due to some inconsistencies in methodology. However, given that in both cases the BLS argues that this work does not substantially affect the hourly compensation estimates, rough comparisons can still be made. For further reference on the description of each country see TCB's [Country Notes](#)
- Note: Variations in previous years are due to revisions made by the sources, including the World Bank's new 2011 PPP benchmarks, which replaced the previous 2005 benchmarks.
- Since 2010 the international comparison of hourly compensation costs (hourly wage rates) between the U.S. and selected developed and "emerging" markets refers to all employed in the manufacturing sector and no longer will be available for production workers only. Production-line wage rates are on average 20% below wage rates for all employed in manufacturing, including production workers, for the 1996-2009 period, for all countries included in the assessment. For further reference see wage-gap assessment of trends and differences between production-line and all employed in manufacturing in compensation cost terms here:  
<[Wage Gap Analysis of PLW versus All employed 1996-2009](#)>

**Sources: The Jus Semper Global Alliance analysis using the sources below. (Sources with X indicate that some of their data is directly incorporated in the table:)**

- o The Jus Semper Global Alliance: Living Wage Gaps Analysis in the manufacturing sector using:
- o The Living Wages North and South Initiative ([TLWNSI](#)) using "Equal Pay for Work of Equal Value" Methodology.
- x Database of World Bank's World Development Indicators, 1975-2017.
- x U.S. Bureau of Labor Statistics, August 2013 and The Conference Board (TCB), International Labor Comparisons Program - Manufacturing Hourly Compensation Costs, February 2018.
- x The Conference Board (TCB) — International Comparisons of Manufacturing Productivity and Unit Labor Costs 2017, July 2018
- Purchasing Power Parities and Real Expenditures of World Economies. Summary of Results and Findings of the 2011 International Comparison Program. World Bank 2014.