STRUCTURAL INDICATOR "LOW WAGE TRAP"

A briefing note with illustrative calculations for the Netherlands (2002)

1. Introduction and purpose of this briefing note

The *"Low Wage Trap"* provides information on the financial consequences for an employed person when increasing his/her work effort and thus his/her wages. While the "*Unemployment Trap*" measures the financial incentives to move from unemployment to employment, the *"Low Wage Trap"* relates to the changes in work effort, either as an increased number of hours worked or due to changes in skills (i.e. increased wages). It compares a person's financial situation while employed, both in the initial and changed situation, focusing on the net gain from the increased work effort. In particular, the *Low Wage Trap*, measured as a *marginal effective tax rate (METR)*, shows which part of such a financial gain is 'taxed away' by the combined effects of higher taxes and reduced or lost benefits.

The METR for the low wage trap case can be calculated for any increase in the number of hours worked or in the gross wage. The METR is often calculated for a marginal increase, such as 1% wage increase. However, in order to avoid exceptional values, it has been decided to measure the METR for a larger change in wages, i.e. from 33% to 67% of APW.

Table I contains for illustrative purposes the latest available OECD-Commission figures for the Low Wage Trap for the years 2001 and 2002 for an employed single person and a one–earner couple with two children, when moving from 33% to 67% of APW.

The objective of this note is to provide any interested party with a simple outline of the *Low Wage Trap* calculations. **Sections 2 to 4** (together with **Tables II and III**) provide this outline, including an illustration of the *Low Wage Trap* calculation for the Netherlands in 2002.

Annex I contains background information about the Dutch tax and benefits system and, in particular, shows the detailed calculations for each component of net income.

The most up-to-date OECD publication "*Benefits and Wages"* (2004) should prove to be a very useful reference source. In particular, the methodology annex of this publication provides further details on these and related tax-benefit calculations as well as the underlying assumptions.

Table I: Low Wage Trap for the years 2001 and 2002 (in %)

Employed single person without children and one-earner couple with two children moving from 33% to 67% of the average earnings of full-time production workers in manufacturing (APW)

Country	**Low Wage Trap (%) at a move from 33% to 67% of APW**			
	2001		**2002**	
	Single person	*One-earner couple with 2 children*	*Single person*	*One-earner couple with 2 children*
Belgium	49.0	34.1	49.4	36.5
Denmark	70.5	110.6	69.4	110.7
Germany	76.1	69.5	77.1	68.5
Greece	15.9	15.9	15.9	15.9
Spain	19.7	23.4	21.2	18.0
France	62.0	94.6	56.5	100.1
Ireland	46.0	75.0	47.6	76.6
Italy	29.6	-9.7	30.2	-12.6
Luxembourg	64.1	110.3	71.8	110.3
Netherlands	72.6	84.5	72.4	80.4
Austria	50.4	93.3	44.7	99.0
Portugal	29.2	55.5	29.6	55.5
Finland	56.7	97.5	67.5	100.0
Sweden	65.5	100.0	63.6	100.0
United Kingdom	61.4	51.1	61.2	57.3
Iceland	38.1	75.2	38.1	74.2
Norway	60.2	83.5	58.2	75.1
USA	32.2	58.5	31.8	55.2
Japan	40.7	93.1	40.0	93.0
Czech Republic	36.4	92.0	34.3	82.4
Hungary	37.8	16.2	33.0	15.8
Poland	33.8	82.3	34.2	74.1
Slovak Republic	45.0	100.0	40.2	100.0

Source: Joint Commission-OECD project using the OECD tax-benefit model

2. Definition of the Low Wage Trap

A low wage trap can arise for a person or a family when the employed person increases his/her work effort which leads only to little or even no increase in "take home" income. **For the present purpose, the extent of any low wage trap (renamed from 'poverty trap') is assessed by computing the marginal effective tax rate (METR) for a working hour transition**. It measures which part (percentage) of the additional gross earnings is 'taken away' through the combined effects of income taxes, social security contributions, and any withdrawal of benefits.

The Low Wage Trap (LWT) is calculated as follows:

LWT (%) = 100% * **{**1 **–** [(change in net income *due to increased work effort*) / (change in gross earnings *due to increased work effort*)**}**

To compute the LWT, the calculation of net income before and after the change in gross earnings is needed. **For the present purpose, the LWT is computed for a change in gross earnings from 33% to 67% of APW.** This is assumed to correspond to a switch in working hours from 33% to 67% of full-time work.

The table below shows the possible components of net income. Some of the components will not apply in every case and in every country. For example, a person may not qualify for social assistance if his/her (family's) earnings (taken together with any received benefits) are above a certain level. Other benefits, such as family benefits, are only available in certain family circumstances. Housing and in-work benefits do not exist in all countries and, if they do, depend on income levels and employment status. Some benefits may be subject to taxes or social insurance contributions while others are not taxable.

Components of in-work income (including social assistance)
Total gross earnings
Plus Family/child benefits
Plus Housing benefit (cash)
Plus Social assistance
Plus In-work benefits
Minus Income tax
Minus Social insurance contributions payable by the employee or benefit recipient
= Employee's/Family's net income

3. Illustrative Calculation of the Low Wage Trap

Table II contains an illustrative example for a single person in the Netherlands. The table shows the individual income components and the calculation of the LWT in 2002.

Table II: Low Wage Trap – the Netherlands (2002)

Illustrative calculation for a single person without children when increasing gross earnings from 33% of the average earnings of full-time production workers in manufacturing to 67% (monthly figures, in €)

Components of monthly earnings	***In work with gross earnings at 33% of the APW***	***In work with gross earnings at 67% of the APW***
Total gross earnings	840.81	1,707.10
Plus Family/child benefits	-	-
plus Housing benefit (cash)	238.45	-
plus Social assistance	72.35	-
plus In-work benefits	-	-
minus Income tax	10.38	61.14
Minus Social insurance contributions	132.89	398.64
= Employee's monthly net income	**1,008.34**	**1,247.32**

The Low Wage Trap *(LWT)* is defined as ***the ratio of change in personal income tax and employee contributions plus changes (reductions) in benefits divided by the increase in gross earnings***, i.e.

LWT (%) = 100% * **{**1 – [(change in net income *due to increased work effort*)] / (change in gross earnings due to increased work effort)**}.**

In the case of table II, the LWT is: 100% * **{**1 – [238.98/866.29]**}** = 72.4%.

This figure means that 72.4% of the gross earnings from the increased work effort are 'taxed away' by the combination of withdrawn benefits (housing benefit and social assistance in this example) and higher tax and social security contributions.

The assumptions used for the calculation are described in **Table III**.

Annex I explains the Netherlands calculations for 2002 in much more depth. It provides background information about the Dutch tax and benefit system. It also gives the detailed calculations for each component of net income.

Table III: Computational basis for the Low Wage Trap

Component of income	***Initial situation in work***	***Changed situation in work***
Total gross earnings (1)	33% of APW wage	67% of APW
Family/child benefits	In some countries family/child benefits are means-tested and, thus, of different importance to families at different wage levels. A standard situation is assumed, i.e. special cases such as handicapped children are not taken into account.	
Housing benefit (2)	Computed on the basis of rented accommodation where the rent amounts to 20% of APW earnings. Where the benefit depends on the area, 70 m^2 are assumed (and any rules limiting the maximum allowable area are taken into account). No special provisions for other types of housing costs (service charges, utility bills, etc.) are considered. Only cash transfers are considered.	
Social assistance	Calculated on the basis of eligibility and entitlement rules of each country. Social assistance can apply when the person's income is sufficiently low. Usually, it is the 'last-resort' assistance, which takes account of other sources of income, including other means-tested benefits such as housing benefit. Social assistance 'tops up' (usually net) income from other sources such as unemployment benefit or earnings.	
In-work benefits	Some countries operate benefits that are conditional upon being in work or working a certain number of hours.	
Income tax (2)	Income taxes are computed for the entire fiscal year assuming that the "in-work" earnings as well as any taxable benefits available while in work are received during the entire 12 months.	
Social insurance contributions (2)	Only contributions paid by the employee are considered.	

(1) Gross earnings cover all payments during the year, including overtime, bonuses, cash supplements and paid holidays. Apart from regular monthly payments, all non-regular bonuses and payments are included (13^{th} or 14^{th} month payments, holiday bonuses, profit-sharing, allowances for leave not taken, etc). The following items are excluded: sickness & unemployment pay which is paid directly by firms on behalf of the government, or as part of a private insurance scheme; non-compulsory employer contributions to private pensions, family allowances, health or life insurance schemes; payments in kind, severance payments and profit-sharing schemes which take the form of dividend distributions.

(2) Where housing benefit, income tax or social insurance contribution rates depend on the region, a "typical" region (such as the capital) is assumed. Income taxes at both the state and regional levels are considered.

Annex I

Background information about the Dutch tax and benefit system in 2002, including the low wage trap calculations

This Annex makes use of a description of the Dutch tax-benefit system compiled by the OECD. All information relates to the year 2002; data are in €.

1. Overview of the tax-benefit system for an employed person in the Netherlands

A system of family related benefits is universally available for families with children. Housing costs can be covered by a separate individual benefit. Family and housing benefits are not taxable. Unemployment benefits and other earnings-related benefits are not considered here because they are not relevant for the calculation of the low-wage trap. In general, the information refers to the tax situation on the 1st January 2002 and the benefit situation on 1st July 2002.

The APW gross earnings level in 2002 was € 30,575 per annum, i.e. 33% of this level is € 10,089.75 per annum and so the gross earnings (Ygross) per month is € 840.81, and 67% of this level is € 20,485.25 per annum and so the gross earnings per month is € 1,707.10.

2. Family/child benefits (FB)

Child benefits are paid for all children under the age of 18 years. The amount depends on the age of the child. These benefits are not income related, not included in any means test and not taxable.

Calculation of the child benefits for a family with two children in the age of 4 and 6 years:

As of 1st of July of 2002, the quarterly child benefit for a child in the age of 0 to 6 years was € 172.57 and for a child in the age of 6 to 12 years € 209.55, leading to an annual total of € 1,528.48 or a monthly amount of € 127.37.

3. Social assistance (SA)

The calculation of the Low Wage Trap (LWT) is requested for two cases: (i) including social assistance, this is used for the structural indicator, and (ii) excluding social assistance. (i) minus (ii) shows the impact, if any, of social assistance.

The Dutch National Assistance Act guarantees a minimum income to any Dutch inhabitant who has insufficient means to exist. Social assistance can apply when the person's income is sufficiently low, and is intended to cover normal costs of living, including the costs of food, housing, heating, furniture and recreation. It 'tops up' net income, usually as 'last-resort' assistance, after taking account of other sources of income, including other means-tested benefits such as housing benefit.

In most countries, social assistance is not taxable because it is a 'last-resort' means-tested income and this means-testing is done against net income.

The Dutch system foresaw a net yearly maximum social assistance of € 9,238.60 for a single (aged 23 or above) and of € 13,198 for a couple in 2002. These benefits decrease with the increase of gross earnings, leading to € 868.16 per year or € 72.35 per month for a single earning 33% of the APW and to € 3,642.56 per year or € 303.55 per month for a couple with the same gross earnings. The social assistance is 0 for both cases when gross earnings increase to 67% of the APW.

4. Housing benefits (HB)

The income concept which is used as a basis for the calculation of the amount of housing benefit might vary from country to country and, therefore, due attention to this concept should be drawn when calculating the housing benefit. In most countries, it is net (or gross) earnings/replacement benefits but without means-tested benefits. Consequently, housing benefit is calculated as the 'first' means-tested benefit and others such as social assistance as 'last resort' benefits. However, in the Netherlands, housing benefit is calculated as the 'last resort' benefit on the basis of a broad 'gross family income'. This gross family income includes both gross earnings/replacement benefit and social assistance. From this follows that the housing benefit in the Netherlands is higher in the case when social assistance is excluded than when it is included. This particular feature, however, is not taken into account in the calculations presented in the tables IV and V.

In the Netherlands, housing benefits are based on rent levels restricted by minima and maxima and dependent on gross family income.

All families, whether or not dependents are present, are eligible. Persons benefit if their gross earnings are less than € 16,948 per annum for a single and € 22,711 for others, and if their capital income is below € 31,424 per annum for a single and € 27,090.68 for a household (highest earner younger than 65 years).

Housing benefit is based on rent levels and taxable income. The underlying principle is that every household always pays part of the rent itself. This is referred to as the ‘standard rent’. In 2002, the monthly standard rent for people with a minimum income was € 166 (for households containing people under 65). There was a higher standard rent for people with a higher income.

Three levels of benefit are paid in the case of rents above the standard rent:

- the difference between the standard rent and the ‘quality allowance limit’ (€ 298 in 2002) is paid in full;

- 75% of any additional rent above the quality allowance limit is paid; the idea behind this is that people should pay a contribution if they rent a more expensive (and therefore better quality) home;

- the amount by which the rent exceeds the ‘cap’ (in 2002 this was € 427 for one and two person households) is only eligible for benefit in the case of people aged 65 and older, people living alone and the handicapped. They receive benefit amounting to 50%.

Monthly house rents up to € 541 qualify for housing benefits. The housing benefit is not taxable in the Netherlands.

The housing benefits amounted in 2002 to

- € 2,861.42 per annum or € 238.45 per month for a single earning 33% of the APW. This amount was 0 in the case of a APW of 67%

- € 2,668.26 per annum or € 222.36 per month for a couple with one earner and two children and gross earnings of 33% of the APW

- € 812.70 per annum or € 67.73 per month for a couple with one earner and two children and gross earnings of 67% of the APW.

5. Tax system

5.1 Tax credits (TC)

In January 2001, a new income tax system was introduced in the Netherlands. Most standard allowances were abolished, and tax credits were introduced. Employees' social security contributions are deductible with the exception of the health insurance contribution. The employers' health insurance contribution is subject to tax.

There is a general tax credit which amounts to € 1,647 per annum. It is also available to partners without income. The tax credit is paid to a person with low income, i.e. less than € 5,100.

The following additional tax credits may apply, depending upon the taxpayer's individual situation and of his/her family.

- Work credit. This credit is the sum of 1.729% of gross earnings from work with a maximum of € 133 and 10.621% of gross earnings from work exceeding € 7,692 up to a maximum of the work credit of € 949.

- Child credit. The basic child credit is € 40 per child at the household income lower than € 56,191. Families with income less than € 25,704 receive an additional maximum amount of € 428 plus € 30 with three or more children. The tax credit phases out to 0 at an income of € 56,191. Families with an income lower than € 29,096 receive an amount of € 341.

- Combination credit. The combination credit is for families with children and is intended to make childcare more affordable to working parents. One person per family with children below the age of 12 years is entitled to a combination credit of € 190 if their individual income from work exceeds € 4,060 per year.

5.2 Taxable income (TI) and income tax (IT)

Taxable Income (TI) is needed in order to calculate Income Tax (IT). Taxable income is also used for the calculation of the General Scheme Insurance Contributions (GIC).

Calculation of the Taxable Income (TI):

TI = Gross Earnings + Employer's health insurance contributions -Allowances

Income tax is levied on the appropriate slices of taxable income (TI), using the rates of income tax shown in the table below.

Slice of taxable income (in €)	**Income tax rate** (%)
0 – 15,331	2.95
15,331 – 27847	8.45
27,847 – 47,745	42.0
47,745 and over	52.0

Combining the different elements described above, the monthly income tax, after deducting tax credits, is equal to:

For the single person case with 33% of the APW: € 124.60 per annum or € 10.38 per month

For the single person case with 67% of the APW: € 733.62 per annum or € 61.14 per month

For the one-earner couple case with 2 children with 33% of the APW: € 17.33 per annum or € 1.44 per month

For the one-earner couple case with 2 children with 67% of the APW: € 540.75 per annum or € 45.06 per month.

5.3 Contributions to the social security system (TIC)

There are three schemes for social security contributions by employees:

- General scheme insurance contributions (GIC)
- Unemployment insurance contributions (UIC)
- Health insurance contributions (HIC)

GIC, UIC and HIC are added together to obtain the employee's Total Insurance Contributions (TIC) which are then subject to the reduction of tax credits. The latter are proportionally reduced both from TIC and income tax.

The general scheme insurance contributions (GIC) covers old age pension (17.9% of taxable income in the first and second tax slice), the survivors pension (1.25% of taxable income in the first and second tax slice) and exceptional medical expenses (10.25% of taxable income in the first and second tax slice), i.e. altogether 29.4% of taxable income.

The unemployment insurance contributions (UIC) are 4.95% of gross earnings exceeding the franchise of € 14,355 (i.e. 4.95% * (Ygross - € 14,355) less compensation allowance (ceiling € 41,499).

The health insurance contributions (HIC) relate to public insurance for medical care if gross earnings are below € 30,700 and account for 1.7 % of the gross earnings below € 28,188 plus a fixed amount of € 240.84 a year for each adult.

The total insurance contributions (TIC), after deducting tax credits, then add up to:

For the single person case with 33% of the APW: € 1,594.71 per annum or € 132.89 per month

For the single person case with 67% of the APW: € 4,783.68 per annum or € 398.64 per month

For the one-earner couple case with 2 children with 33% of the APW: € 706.98 per annum or € 58.92 per month

For the one-earner couple case with 2 children with 67% of the APW: € 3,042.94 per annum or € 253.58 per month.

6. Employment conditional (or in-work) benefits

Some countries operate benefits that are conditional upon being in work or working a certain number of hours. No such benefits exist in the Netherlands.

7. Summary Table – excluding and including social assistance

The table below provides a summary of the income components for which the individual calculations were described in sections 1 to 6 of this Annex. The table shows the calculations for the Netherlands in 2002: (i) *including* social assistance, and (ii) *excluding* social assistance, ignoring the effect of increased housing benefits.

TABLE IV: THE NETHERLANDS, SUMMARY OF THE LOW WAGE TRAP CALCULATION (2002, monthly figures, in €)

The annual tax/benefit position of an employed single person without children

(i) Calculation *including* Social Assistance (Structural indicator)	*33% of the APW level*	*67% of the APW level*
A. Gross earnings in work (• gross)	**840.81**	**1,707.10**
B. Income tax and social security contributions		
Income tax (IT)	10.38	61.14
Total social insurance contributions (TIC)	132.89	398.64
Total	**143.27**	**459.78**
C. Benefits		
Family/child benefits	0	0
Housing benefits (HB)	238.45	0
Social assistance (SA)	72.35	0
Total	**310.80**	**0**
D. Employment conditional benefits		
Combination credit	0	0
E. Net income in work (= A - B + C + D)	**1,008.34**	**1,247.32**
• • net = 1,247.32 – 1,008.34	**238.98**	
• • gross = 1,707.10 – 840.81	**866.29**	
F. Low Wage Trap = 100% * [1 - (• • net / • • gross)]	**72.4%**	
(ii) Calculation *excluding* Social Assistance		
G. Social assistance	**72.35**	**0**
I. Net income in work (= E – G)	**935.99**	**1,247.32**
• • net = 1,247.32 – 935.99	**311.33**	
• • gross = 1,707.10 – 840.81	**866.29**	
J. Low Wage Trap = 100%* [1 - (• • net / • • gross)]	**64.1%**	

TABLE V: THE NETHERLANDS, SUMMARY OF THE LOW WAGE TRAP CALCULATION (2002, monthly figures, in €)

The annual tax/benefit position of a one-earner couple with 2 children

(i) Calculation *including* Social Assistance	*33% of the APW level*	*67% of the APW level*
A. Gross earnings in work (• gross)	**840.81**	**1,707.10**
B. Income tax and social security contributions		
Income tax (IT)	1.44	45.06
Total social insurance contributions (TIC)	58.92	253.58
Total	**60.36**	**298.64**
C. Non-taxable benefits		
Family/child benefits	127.37	127.37
Housing benefits (HB)	222.36	67.73
Social assistance (SA)	303.55	0
Total	**653.28**	**195.00**
D. Employment conditional benefits:		
Combination credit	15.83	15.83
E. Net income in work (= A - B + C + D)	**1,449.56**	**1,619.29**
• • net = 1,619.29 – 1,449.56	**169.73**	
• • gross = 1,707.10 – 840.81	**866.29**	
F. Low Wage Trap = 100% * [1 - (• • net / • • gross)]	**80.4%**	
(ii) Calculation *excluding* Social Assistance		
G. Social assistance	**303.55**	**0**
I. Net income in work (= E - G)	**1,146.01**	**1,619.29**
• • net = 1,619.29 – 1,146.01	**473.28**	
• • gross = 1,707.10 – 840.81	**866.29**	
J. Low Wage Trap = 100% *[1- (• • net / • • gross)]	**45.4%**	