



Munich Personal RePEc Archive

## **A win-win measure out of the crisis: A graphical discussion of the tax void**

Colignatus, Thomas

Samuel van Houten Genootschap

23 April 2009

Online at <https://mpra.ub.uni-muenchen.de/14812/>  
MPRA Paper No. 14812, posted 24 Apr 2009 00:52 UTC

# A win-win measure out of the crisis: A graphical discussion of the tax void

Thomas Colignatus

April 23 2009

<http://www.dataweb.nl/~cool>

Samuel van Houten Genootschap

## **Abstract**

A win-win measure out of the crisis is the abolition of the tax void in OECD countries. The tax void is explained with graphics and it is shown how it can be eliminated for free. Adjustment costs will lie in understanding and adaptation of administrative procedure and not in the real economy.

## **Introduction**

The tax void differs from the Harberger triangle. It applies to heterogeneous labour and the productivity range between net minimum income and gross minimum wage costs.

In 1889, A.J. Cohen Stuart proposed to put tax exemption at the level of subsistence. His analogy was: "A bridge must support its own weight before it can carry a load." This was less convincing in his days since when a worker collapsed there was always another one. In our days that worker enters the welfare system and thus for us there are costs when we do not allow people to support themselves. When the income tax is so high that it is not collected then there can be said to be a tax void. The levies in the tax void only have the effect to drive up the gross minimum wage and cause subsequent unemployment. Hence it makes sense to abolish them. Abolishing the tax void would mean that exemption would be chosen at subsistence.

The notion of the tax void has come up in discussion in Holland since 1990. For the OECD, general knowledge about policies on taxes, premiums and the minimum wage allowed the inference that it was a general problem. However, calculations were practically impossible because of the relative inaccessibility for foreigners of the (complex) institutional data. Nowadays, however, governments present the regulations on the internet while wikipedia gives accessible reviews. In the last period I have been able to confirm the existence of the tax void for the USA (Appendix A) and Ireland (Appendix B). Estimation of the distributions of income and productivity for those countries however remains elusive. Given the likely wide occurrence of the tax void in the OECD countries and the need for policy options in this time of crisis, a discussion remains warranted. This discussion will be clearest in graphical manner. Since the case of Holland remains the only complete development, the following will use the Dutch example. This paper actually selects texts and graphs from Colignatus (2005) and then for the appendices on the USA and Ireland produces the tax plots without the productivity distributions.

The tax void will be a new notion for the international community of researchers on taxation, social security and the minimum wage. Since the tax void causes unemployment and a shift of the Phillipscurve, the notion will be new and relevant for macro-economists as well. A better understanding of the tax void will help on the road towards recovery. Since 1950 we have seen a

gradual rise of the tax void and ensuing unemployment at the lower end of the labour market. Europe absorbed more people in welfare and the US accepted more poverty. It also contributed to the shift of the Phillipscurve and hence stagflation. As authorities did not notice this cause, they have been fighting stagflation with other means, such as deregulation. Now that we start to re-regulate again, stagflation will rear its head again too. One of the conditions for resolving stagflation is also a resolution of the tax void.

### **Definition of the tax void**

The tax void is the income and productivity range on the labour market between the net minimum wage and gross minimum wage costs. In a graph, it is the horizontal income range, only at the level of the minimum wage. This compares with the tax wedge that is the vertical difference between any net and gross income. The tax void is special because (a) taxes and premiums are levied there officially, (b) no taxes and premiums are collected there in practice since workers cannot work below the minimum wage, (c) abolition of such taxes and premiums would hence not cost anything and would generate scope for more employment.

While the tax void can be expressed in terms of an income range it can also be measured by the percentage of unemployment that it contains.

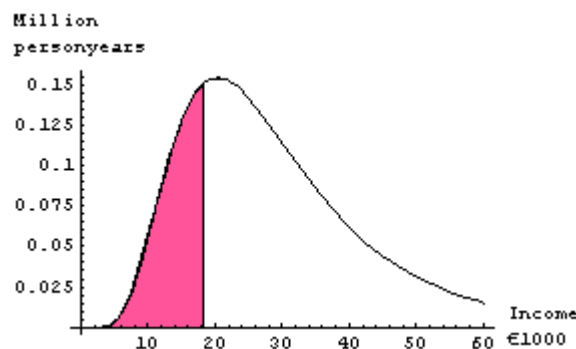
The following discussion will use simplifying assumptions. Key aspects are:

- heterogeneous labour, and the use of an earnings distribution
- the minimum wage and unemployment
- decomposition of the minimum wage in subsistence and tax burden
- analysis of the tax void
- differential indexation
- dynamic marginal tax rates
- consequences for the macro model: spillover and domino effects.

### **Earnings distribution**

Figure 1 gives the Dutch earnings distribution estimated on a standard lognormal shape. With each level of income there is a density of ‘personyears’ of people who earn that level. The figure approximates the situation in Holland 2002, though without parttimers. Table 1 gives the Dutch minimum wage situation. The Dutch legal minimum wage costs are about € 18.3 thousand and the shaded area in the figure gives the unemployment below the minimum wage. Union minimum wages can be 10% higher. Official Dutch unemployment is lower since the minimum wage does not hold for parttimers while many others are given permanent benefits and are not counted as participating.

**Figure 1: Unemployment below the minimum wage**



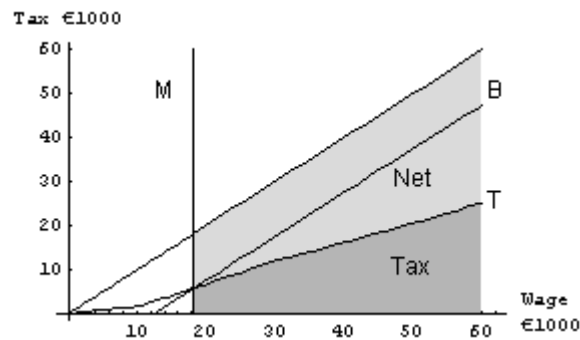
**Table 1: The wedge at subsistence that causes the tax void (single person)**

<i>Dutch legal minimum wage 2002 (per annum)</i>	€
Gross minimum wage in the official statute	15,638
Net, after deduction of taxes incl. premiums for the employee	12,516
Gross minimum wage costs: gross + premiums for the employer	18,265
All taxes incl. premiums (though exclusive of VAT etc.)	5,749
Tax as a percentage of gross minimum wage	31.5 %
Tax as a percentage of net income	45.9 %

### **The tax plot**

Figure 2 is the *tax plot*. We use “tax” inclusive of premiums. Taxes and premiums are also mathematically redefined from their normal bases to the joint base of gross wage costs. The horizontal axis gives gross wage costs, the vertical axis the tax (incl. premiums). The tax line *T* gives the Dutch tax brackets. Net income is given by the difference between the tax and the 45-degrees line. Subsistence causes the line *B* parallel to the 45-degrees line. This line cuts off a part of net income. The intersection of the subsistence and tax lines gives the minimum wage *M*. You must earn at least *M* to satisfy the minimum net income requirement *B*. Since there are no full time wage earners below *M* the schedules are only relevant above it.

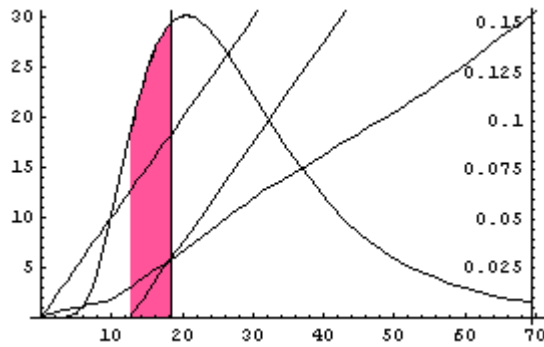
**Figure 2: Tax plot revisited**



### **The tax void plot**

Figure 3 is the *tax void plot* that combines the earnings distribution and the tax plot, with taxes on the left axis and the density on the right axis. The tax appears effective *at* and *above* the minimum wage, but not *below* it. Part of unemployment below the minimum wage still has a productivity above subsistence. If taxes would be abolished in that section then the affected people could still earn a living wage and need no income support. This kind of unemployment can be called the Tax Void Unemployment. The shaded area in Figure 3 is its estimate for Holland 2002.

**Figure 3: Tax Void Unemployment**



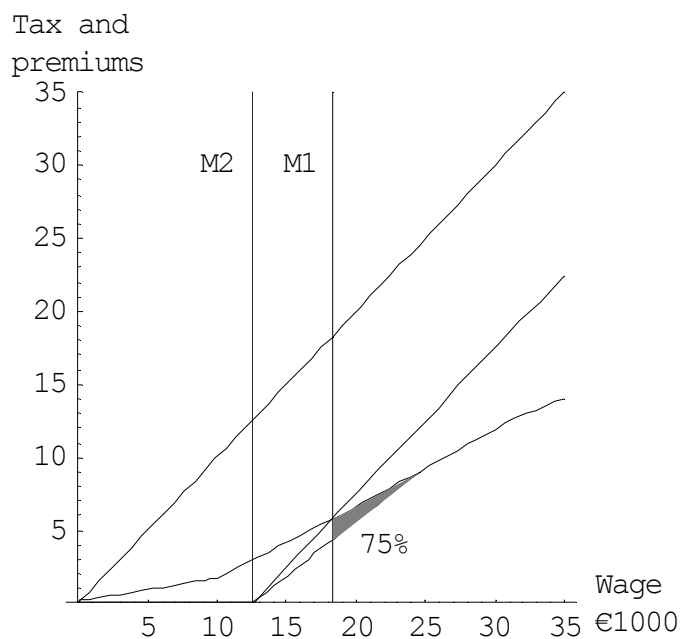
**Value added tax**

Note that a switch to value added tax (VAT) does not help here. Conceivably, with minimum wage labour supply inelastic, all VAT would fall on that labour. If subsistence would be defined in prices inclusive of VAT, then there is only a derived calculation (and no real effect) to find the real level. However, if we allow that minimum wage labour is elastic with respect to the exit to the welfare system and if we would wish that subsistence is at the actual real level, then the conclusion must be that the VAT extends the void both downwards and upwards. The best solution then would be to have no VAT but only an income tax with exemption at subsistence. To be clear: while the tax void is defined on productivity at the income level, the larger VAT-inclusive void is defined on productivity in terms of shop prices.

**Eliminating the tax void**

Indeed, finding the proper income tax regime is not self-evident either. Raising exemption sounds like a very expensive operation but there is a smart way that leaves most income taxes unaffected. Figure 4 uses a first bracket of an arbitrary 75% which allows the minimum wage to shift from M1 to M2. The shaded area gives the tax revenue lost, that would be partially compensated by saved benefits. There is a percentage such that there is full compensation.

**Figure 4: Linear repair Holland 2002**



## **Causes of the tax void**

How has the tax void come about ? Since abolishing the tax void does not cost anything, and would generate sizeable employment, why don't we abolish it ?

There are three mechanisms.

- (1) In Holland around 1950 the income tax exemption was at about the level of subsistence - also due to the theoretical influence of Cohen Stuart. Since then, the welfare state has been built, with various "insurance" premiums that do not have an exemption. The conclusion is that is better to let the lowly productive be insured for free, to prevent that they must be supported completely.
- (2) The second mechanism can be called "differential indexation". OECD countries adjust their tax system for inflation, while, on the other hand, subsistence tends to rise for reasons in social psychology with the general level of income, i.e. inflation and real growth. When tax exemption lags behind subsistence then there is a multiplier effect on the gross minimum wage, thus with an accelerated increase of the tax void. This process also explains the "squeezing of income differentials" in OECD countries.
- (3) The third mechanism has to do with the economic theory of optimal taxation. In optimization, we rightly use derivatives or marginal tax rates. In the standard analysis we find optimal incentives and optimal growth when marginal tax rates are low. This also explains the shift from the income tax to the VAT without exemption. However, there is an alternative to this standard analysis. This alternative does not use partial derivatives but total derivatives, and includes the annual indexation of taxes. If exemption and tax brackets are indexed on the average growth of incomes then the average tax payer will not pay the statutory marginal rate but the same average tax as before. The "dynamic" marginal tax rate is the average tax rate. The standard view on marginal tax rates is rather overrated.

## **Caveat**

This discussion has focussed on the explanation of the main argument using graphics. The underlying argument is much more subtle and extensive, and can be found in Colignatus (2005). This includes a mathematical theorem on stylized economic facts that the creation of a tax void causes a regime switch. It is because of this theorem that we can be rather sure of our conclusions. The costs of adjustments will lie in understanding and adaptation of administrative procedure and not in the real economy. Nevertheless, the systems of taxation, social security and minimum wage in the real economy are quite complex and countries looking for adjustment may find the need to re-evaluate acquired conventions and "rights".

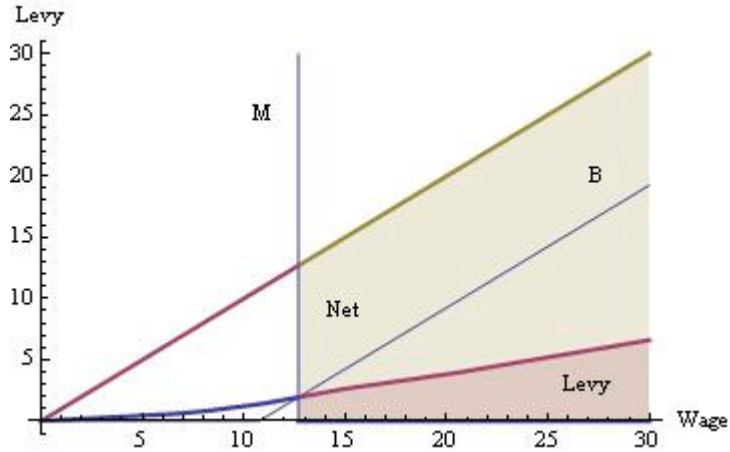
## **Conclusion**

The analysis on the tax void amends existing models and contributes to a better focus. It is important to see that it will be news to the large body of economics and policy makers. It is not in the textbooks on taxes, social security, minimum wage and macro-economics itself. It is not in the journals, not in the newspapers and not in the policy papers of our politicians. Elements can be found, of course, since in principle there is nothing new under the sun. Nevertheless, incorporation of the analysis of the tax void in these areas will enhance clarity. It will provide a focus on a win-win measure out of the current economic crisis.

### Appendix A: Tentative tax plot for the USA

We use “tax” inclusive of premiums. For the USA, Figure 5 is taken from Colignatus (2009b). This still excludes a sales tax of 8%.

**Figure 5: US 2009 Tax plot, \$1000.**  
**Minimum wage costs \$12.7 and net minimum income \$10.8 thousand**

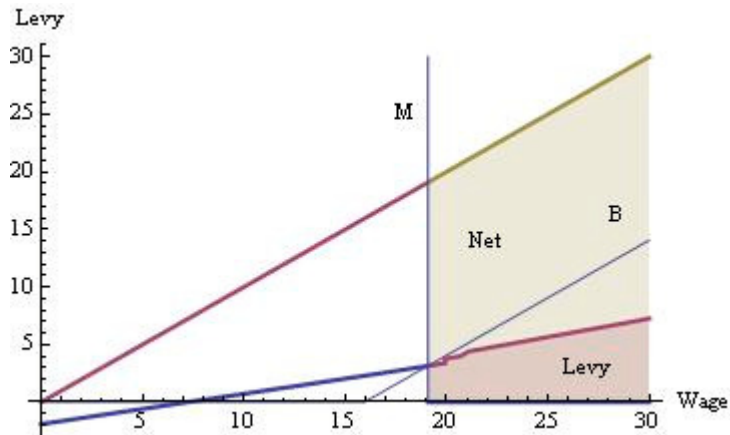


### Appendix B: Tentative tax plot for the Ireland

We use “tax” inclusive of premiums.

Ireland is one of the countries hardest hit by the current crisis. More insight in its tax void will help on the road towards recovery. A tentative calculation, not show here, gives Figure 6. This still excludes a VAT of 21.5%.

**Figure 6: Ireland 2009 Tax plot, €1000.**  
**Minimum wage costs €19.1 and net minimum income €15.9 thousand**



## **Literature**

Colignatus (2005), "Definition & Reality in the General Theory of Political Economy", 2<sup>nd</sup> edition, Dutch University Press, see also <http://www.dataweb.nl/~cool/Papers/Drgtpe/Index.html>

Colignatus (2008), "A note on competing economic theories on the 2007-2008+ financial crisis: The case for (hidden) stagflation", <http://mpira.ub.uni-muenchen.de/10831>

Colignatus (2009a), "The current economic crisis: A solution that "lies buried and obscured in a mass of false theory", <http://www.voxeu.org/index.php?q=node/3087>

Colignatus (2009b), "The macro-economics of repressed stagflation. Part 2: The crisis of 2009+ and a reduction of the working week", <http://mpira.ub.uni-muenchen.de/14180/>