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# **Economics as victim between lawyers and mathematics: An explanation for the tax credit, Bulgarian potential fraud, European unemployment and the economic crisis**

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## **Keywords**

tax credit, tax void, exemption, tax law, premium, insurance, fraud, lies, irregularity, boycott, Bulgaria, Holland, Europe, economic crisis, unemployment, tax harmonisation, basic income, basic benefit, heterogenous labour, minimum wage, productivity, equity, efficiency, transparency, free lunch, political popularity, welfare state, poverty, surplus, external account, export, low wage policy, stagflation, financial deregulation, scientific integrity

## **Summary**

(1) The basic problem in OECD countries is the tax void. (2) A tax system with an exemption is more transparent than a system with a tax credit. (3) Exemption should be at the level of the net minimum wage so that such workers can work at net = gross. (4) A tax credit is a sufficient but not a necessary condition for vertical translation of a piecewise-linear tax system. (5) The *Tax Plan for the 21<sup>st</sup> Century* of 1998-2001 contained a deliberate misrepresentation. (6) The issue is important for the current economic crisis and European unemployment: (6a) The analysis is an element in the explanation of the aggressive export policies of Northern Europe via their low wage policies. (6b) Given the similarity of the tax policies in the OECD countries we find an explanation for the Great Stagflation since 1970 that was masked by financial deregulation. (6c) One should hope that Jeroen Dijsselbloem, the Dutch minister of Finance and chairperson of the Eurogroup, understands this issue. (7) A root cause lies in the handling of economic science in Holland. Though other countries can already benefit from the analysis presented here, it still remains better that the integrity of economic science is restored in Holland so that the full analysis becomes available.

## **Introduction**

The Dutch tax credit system pays out immediately on application and only checks later whether the application was sound or not, and whether the applicant can keep the money or has to pay back, or has to receive even a bit more. In the weeks before May 14 2013 it was reported that some EUR 95 million of tax proceeds were likely lost to the Dutch Treasury, in some 280 irregularities and potential fraud cases and in particular to Bulgarian tricksters who had collected tax credit handouts that they would not pay back.

On May 14 2013 itself, Dutch Parliament had some questions for the assistant minister of finance Frans Weekers: When did he learn about the fraud in the Dutch tax system and the airplanes with Bulgarian tricksters, and when did he do what about these? What did he do with the internal complaints of tax officials at the Treasury since at least 2006 that the system was an invitation for fraud? At the end of the debate the opposition forces presented a vote of no-confidence but the assistant minister kept the backing of the majority government who apparently understood his somewhat convoluted reasoning. A short report in English is by The Amsterdam Herald (2013). A report in Dutch is e.g. NRC (2013). A more general report about tax fraud is by the labour union ABVAKABO (2013).

In itself there is a tangent on what would be a more democratic form of governance, see Colignatus *Voting Theory for Democracy* (2011a) and the related papers on democracy. One would tend to prefer proportional representation and also an Executive Branch that mirrors Parliament. With flexible majorities there would be more room for minorities. It would also reduce oppositional theater such as much of what we saw on May 14, since some parties now in opposition were in government when the system was created.

We can understand that Bulgarians took the plane to Holland to collect free money. It is legal too, when you claim a serious effort to pay it back later if needed but turn out unable to do so. It is only illegal when the Treasury can show that you intended not to try to pay it back if needed. The scheme is a quagmire for fraud and a bonanza for lawyers. The true question is why the Dutch Treasury started the system in the first place. In the years before 2000 the government first checked the income statement and then determined the tax. So what caused the Dutch government to switch to this new system that is so sensitive to fraud ?

A false argument is that the system was intended for Holland only and that it would work for the law-abiding Dutch citizen, where there is also a system of registration and information from various authorities. Many of the potential fraud cases apply also to Dutch inhabitants and thus it is a false argument to suggest that it is the increasing European integration that causes the problem. A point is here that the total amount of tax credit handouts is about EUR 12 billion per annum, so that a cost of EUR 0.1 billion over a period of years seems negligible. However, there are also reports that the Treasury has been overloaded in work and has approved applications to get rid of them, so that the estimate of EUR 95 million of lost proceeds is only an underestimate. Unfortunately Parliament did not press this point.

The true argument is a bit more complex and is the story how sound economic thought falls victim between lawyers and mathematics.

The tax credit approach was introduced in Holland in 1998-2000 by finance minister Gerrit Zalm with his *Tax Plan for the 21<sup>st</sup> Century*, that became effective in 2001. Stated objectives were to reduce complexity and enhance transparency and to improve equity & efficiency. For the present discussion there was the important point that tax exemption was replaced by a tax credit, to find for example a better fit with the labour market. We may guess (there is no proof) that an unstated objective was that a tax credit could evolve into a meagre "basic income" (better: "basic benefit") that could replace the richer benefit system of the Dutch welfare state. Milton Friedman has proposed such a basic benefit since the 1960s. Zalm as director of the Dutch Central Planning Bureau in the study CPB (1992), *Scanning the Future*, already had presented a scenario with a meagre basic benefit. It is debatable however whether the tax credit approach is so transparent and equitable & efficient, and whether the prospect of a meagre basic benefit is so attractive. Though it is only a guess, it is not impossible and even likely that there is some wishful political idealism involved that neglects the proper analysis.

The story is important not just for understanding the Bulgarian potential fraud and for tax harmonisation issues for the European Union, but also for understanding European unemployment and the economic crisis.

- (1) Unemployment contains a large subgroup at and below the minimum wage, that depends upon gross labour costs, of which taxes and premiums are a substantial part. Overall exemption be best put at the level of the net minimum, so that workers can start working at net = gross. The taxes and premiums between net income and gross costs can be waived at no cost, it presents a tax void, since those workers are unemployed and cannot pay those levies anyway. The issue exists in the OECD in general, but the case is more exemplary for Holland given its generous welfare state due to its natural gas income, see Colignatus (2009a).
- (2) Holland has a mismatch in the tax burden that causes mass unemployment in its economy. Holland solves this problem by an overall low wage policy targetted at exports, that causes a large surplus on the external account since 1971, see Colignatus (2009b). Since Holland is a small country this imbalance did not draw much attention. When Germany copied the Dutch example then it became more obvious that Northern Europe has an aggressive export policy.

- (3) These two points are crucial elements for understanding European unemployment and the economic crisis. Much attention nowadays is on financial and monetary aspects, and rightly so, see Colignatus (2012a), but financial deregulation was chosen as a solution approach to unemployment when the authorities were not aware of (1) and (2), and now that it appears that deregulation is not the solution, the original problem and unemployment returns, see Colignatus (2008). The key analysis is in Colignatus (2011b) while new papers are collected in Colignatus (2012b).
- (4) One should hope that Jeroen Dijsselbloem, the chairman of the Eurozone Group, understands the issue. Now that his assistant minister is so in trouble by the Bulgarian potential fraud and tax system basics, Dijsselbloem has an opportunity to show what he understands. If the problem isn't solved for Holland, then this is a troubling signal about what Dijsselbloem understands about the European situation.

These issues cannot be solved by 'specialists'. One requires insight in the framework of integration of various angles of the analysis: taxation, insurance, labour market with heterogenous labour, international competition, sheltered and exposed sectors, finance, monetary economics, and overall macro-economics. One requires insight how things work out mathematically and empirically. Specialists can confuse the discussion by inserting their own concepts and neglecting the impact of their fields on other issues.

In the following it will be enlightening to start with how tax lawyers can confuse the analysis. This is a paraphrase of what happened in Holland with the switch from tax exemption to the tax credit. Once you are confused, we check how things are mathematically, which is an approach that few tax lawyers or Parliamentarians will understand. Subsequently, we check how the proper economic analysis falls victim to lawyers and mathematics, since tax specialists and pure mathematics do not consider the labour market and the unemployment due to the tax void.

### ***A legal approach to piecewise linear taxation***

Let  $y$  be earnings and  $x$  exemption, then the legal term is that  $z = y - x$  is *taxable income*.

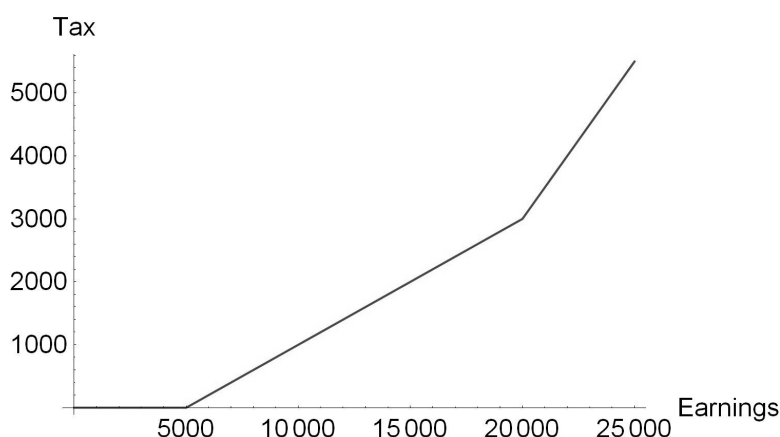
A common tax schedule has a piecewise linear scheme. For example two tax brackets of 20% and 50% and the threshold at EUR 15000.

The tricky point is that the threshold applies to taxable income  $z$ .

Mathematically, this system translates into the simpler set-up of three brackets of 0%, 20% and 50% with the thresholds of  $x$ ,  $15000 + x$ , now directly applied to earnings  $y$ .

The direct presentation is easier to understand, see Figure 1, where we take  $x = 5000$ .

**Figure 1: Piecewise linear tax directly on earnings**



The exemption can be transformed into a tax credit. The Bentham tax scheme has only exemption  $x$  and a single rate  $r$  and those may be transformed into credit  $c = r x$ .

$$\text{BenthamTax}[y] = r(y - x) = r y - r x = r y - c$$

This recalculation can also be done for the first bracket of a piecewise linear scheme.

Note that we seem to lose the distinction between earnings  $y$  and taxable income  $z$  in this recalculation. Namely, the tax rate is applied to earnings  $y$ , so that apparently all earnings are regarded as taxable income. After the “tax” has been determined, the amount is reduced by a tax credit  $c$  though, to arrive at the final value. The language of the world of exemption does not simply translate into the language of the world of the tax credit.

We thus can imagine a confusing dialogue between a tax lawyer and a mathematician.

### ***How a dialogue might proceed***

We might hear the following dialogue.

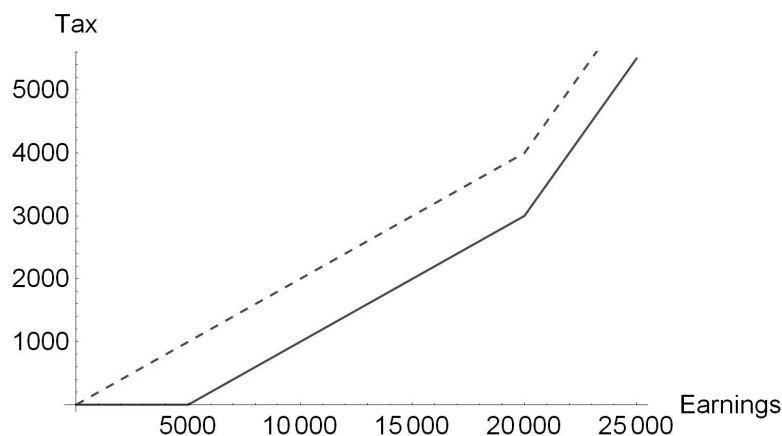
<i>Tax lawyer</i>	<i>Mathematician</i>
	When you introduced the tax credit, you abolished the legal notion of tax exemption.
Not really. We just gave it the value 0.	
	The introduction of the tax credit causes the distinction between $y$ and $z$ to become muddled. To prevent this muddle, you better abolish that notion of “taxable income” and switch to the general model where exemption is the first bracket.
Not really. We still apply the rule that the tax brackets apply to taxable income. We take earnings $y$ and subtract 0, and then apply the brackets to $z$ .	
	Yes, I understand your legal reasoning, but effectively, you just write up things differently that are mathematically just the same.
Perhaps so. I do not understand mathematics. But I understand what I do legally, and this makes perfect sense to me.	
(*) There is an important effect for policy. When we raise exemption $x$ to $x + a$ then the higher levels of income have a greater benefit. But if we raise the tax credit $c$ to $c + b$ then all have the same benefit. Thus the system with a tax credit is better for equity.	
	This is mathematical gibberish. I already established that the two systems are mathematically the same. So you cannot argue that they are different. Whenever you want to achieve your “equitable” effect from raising $c$ to $c + b$ then you can always find a proper translation that involves a specific tax exemption. You seem to be confused between a horizontal and a vertical shift of the system.

This is gibberish to me. I proceed with what I understand.	
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Statement (\*) above is an abstract of paragraph 8.2.3.3 of the official document of the *Tax Plan for the 21<sup>st</sup> Century*. A summary explanation on this confusion about the horizontal and vertical translation is Colignatus (1998) (in Dutch). That confusion can also be seen in graphs Figure 2 and Figure 3 that use above numerical example.

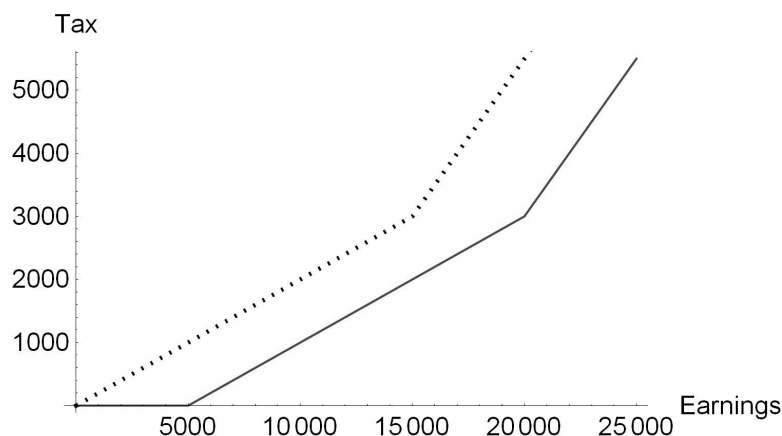
In this case the tax credit has a value of  $1000 = 20\% * 5000$ . Changing the tax credit means shifting the system vertically. A consequence of raising the tax credit  $c$  to  $c + b$  is that exemption will be higher and the first non-exemption bracket will be shorter.

**Figure 2: Vertical translation of a tax scheme**



The confusion of the tax lawyer is that he or she assumes that all bracket lengths will remain the same. A relevant graph is when we confuse  $y$  and  $z$ . A tax lawyer who uses a system with *taxable income* will assume the absence of exemption (already eliminated) and fixed sizes of the tax brackets. In that line of thought the introduction of an exemption causes a horizontal shift. In itself this is correct. But it is not correct with regards to the “conclusion” in statement (\*) above. Given targets on equity, one can achieve these in both systems, and it is not correct to hold that this would require a system with a tax credit. Thus statement (\*) is *sufficient* but not *necessary*.

**Figure 3: Horizontal translation of a tax scheme**



## ***A triologue with economic analysis as a victim***

For an economist, above exposition and dialogue between tax law and math is rather hopeless. It is wonderful that mathematical analysis shows us the limited understanding in tax law. But such analysis solves little since mathematics only looks at the equations and not at reality, where a value of exemption must be chosen. The tax lawyer arrives at a value based upon reasons taken from tax law tradition, and not necessarily targetted at economics.

For an economist, tax exemption is best chosen at the level of the net minimum wage, so that a minimum wage earner can work at net = gross costs, so that the tax void is empty, so that virtual taxes do not cause unemployment that make taxes virtual. See Colignatus (2009a) for a description of the tax void.

<i>Tax lawyer</i>	<i>Economist</i>
	When you introduced the tax credit, you abolished the legal notion of tax exemption.
Not really. We just gave it the value 0.	
	Can't we adopt a law that setting exemption at zero means its abolition ? Anyway, the Dutch economist A.J. Cohen Stuart in 1889 (124 years ago) gave the perfect analogy: "A bridge must bear its own weight before it can carry a load." In the same way a worker at the minimum cannot pay taxes since he or she must first earn subsistence.
Ah, yes, we have the tax credit for this reason.	
	The tax credit for the minimum wage in 2013 is about EUR 3700. <sup>1</sup> The tax rate is 5.85% so that the credit means an exemption of EUR 64000. There is an additional 31.15% for social insurance that has hardly a refund. The tax void is sizeable, including its associated unemployment.
I don't know what you mean by "tax void". It is obvious that insurance doesn't have a tax credit. Insurance is not a tax, even though it is mandatory. For unemployment, I refer you to that relevant Ministry of SZW.	
	Would it not be more transparant for policy making and for equity & efficiency to return to the system with tax exemption, and also introduce exemption for mandatory insurance that has the effect of a tax ?
(* ) There is an important effect for policy. When we raise exemption $x$ to $x + a$ then the higher levels of income have a greater benefit. But if we raise the tax credit $c$ to $c + b$ then all have the same benefit. Thus the system with a tax credit is better for equity.	

<sup>1</sup> The tax credit now depends on income. The objective of transparency is gone.  
[http://www.belastingdienst.nl/wps/wcm/connect/bldcontentnl/belastingdienst/prive/inkomstenbelasting/nieuw\\_in\\_2013/heffingskortingen/arbeidskorting/tabel\\_arbeidskorting](http://www.belastingdienst.nl/wps/wcm/connect/bldcontentnl/belastingdienst/prive/inkomstenbelasting/nieuw_in_2013/heffingskortingen/arbeidskorting/tabel_arbeidskorting)

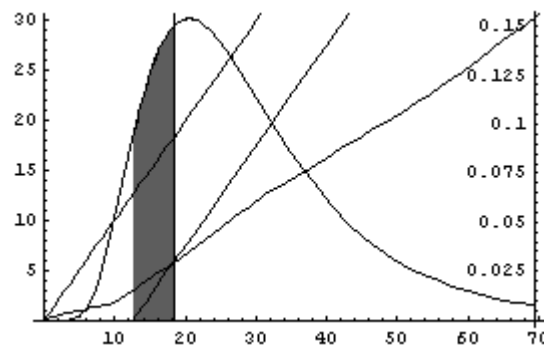
	This is mathematical gibberish. Can I refer you to the mathematical analysis, since this is the most transparent way to explain this ?
This mathematics is gibberish to me. I proceed with what I understand.	

The appendix shows that the discussion can become more confusing when the additional condition is imposed that the tax schemes generate the same revenue.

### ***A graph of the tax void***

Though above refers to Colignatus (2009a) for discussion of the tax void, it may be instructive to include a graph so that readers may be more motivated to actually consider that paper. Figure 4 contains a graph from the cover of DRGTPE, see Colignatus (2011b). The graph was originally designed in the middle of the 1990s using Dutch florins, but the switch to the euro and inflation generate similar values for 2013. The horizontal axis gives labour costs (earnings plus employer premiums). The left axis gives taxation. The minimum wage arises from the intersection of the tax schedule and the subsistence line. The right axis gives the lognormal distribution of heterogenous labour with its gross labour costs. The shaded area is the tax void between net minimum wage and gross minimum wage costs. The tax void gives the unemployment that can disappear at no cost since the tax void can be abolished at no cost. Taxes and premiums are not collected in this range since the workers with that level of productivity are unemployed anyway.

**Figure 4: Tax void plot from the cover of DRGTPE**



### ***Other economists***

The above paints the situation how economics can fall victim between tax law and mathematics. It is entirely conceivable however that also an economist may not quite understand the situation. An economist might receive training from a tax lawyer and forget about checking up on the mathematical properties and application to reality. The economist would effectively be a tax lawyer on the issue even though officially be an economist. The situation can be quite confusing but one may hope that the basic training for economics allows more scope for finding the common ground of sensibility.

There is the Basic Income Earth Network that advances the notion of a universal basic income, see BIEN (2013). The economists in this network do not tend to explain that it is better to first eliminate the tax void before proceeding further. One might hold that when the subject is a basic income then the subject is not the tax void. In a way that is true. But in another way it is fair to require that one should consider all arguments. When unemployment



at the bottom of the labour market can be reduced in a crucial manner then a basic income might not be needed, and perhaps some additional employment subsidies for special groups might suffice. One would presume that especially the economists in BIEN would be sensitive to this analysis, but apparently they are not.

The author of this article has graduated as econometrician in 1982, and worked at the Dutch Central Planning Bureau (CPB) in 1982 - 1991. The paper Colignatus (1990) that gives a new approach to unemployment that includes elements of the above had been presented at a congress and was available as an internal note at the CPB. The author had also been a member since 1974 of the Partij van de Arbeid (PvdA), the Social Democratic party of The Netherlands. The PvdA also has a scientific bureau, Wiardi Beckman Stichting, and there was a committee of economic scientists affiliated to PvdA and WBS. The author proposed that committee in 1991 that he was allowed to present that paper to them. The secretary of that committee Paul de Beer who worked at WBS declined and wrote a note to that effect. Also because of some other events this author left the PvdA. The episode is part of the explanation why the Social Democrats in Europe are still much at a loss about the economy. Paul de Beer was also one of the early members of BIEN and one surmises that he should have seen the connection.

### ***Other legal issues***

We compared legal thought on the tax credit with the approaches in mathematics and economics. There are also some other legal issues for this paper.

There is a distinction between an actual fraud and a potential fraud. For an actual fraud we require a verdict by a judge in the national legal system. Before this happens, we can only speak about an irregularity or potential fraud. This is the reason why this article very carefully speaks about the 'potential Bulgarian fraud' only. For the public media it is very tempting to speak about actual frauds but a suspect ought to be assumed innocent until proven guilty.

A second point is that this article might require a disclaimer. This article is critical of the performance of Gerrit Zalm as director of the Dutch Central Planning Bureau in 1989-1994 and minister of Finance of The Netherlands in 1994-2002 and 2003-2007. In 1982-1991 the author worked at said CPB while Zalm as the new director since 1989 blocked the discussion of his analysis in 1990 and dismissed the author in 1991. The author explains that this is censorship of science and an abuse of power, advises an enquiry by Parliament, and since 2004 he advises a boycott of Holland till the issue is resolved. Next to "Greek statistics" at Elstat we also have "Dutch economics" at CPB. Readers of this article are advised to beware of biases on any side.

A third point is that Colignatus (1989) (in Dutch) clearly states that the Dutch government deliberately lied in the presentation of the *Tax Plan for the 21<sup>st</sup> Century*. When a government lies then there arises the sensitive and perhaps legal issue whether one can state that it lies. But let us check that it was a deliberate lie. The Plan contains a statement that is paraphrased here as statement (\*) above. It claims that the tax credit is a necessary condition for this kind of equity (a vertical shift) while it is not. One might argue that the Plan had been written by tax lawyers who did not see the possibility of a vertical shift via exemption. Indeed, the above describes such a situation. However, one cannot maintain that the Dutch Treasury with its collective intelligence of tax lawyers, mathematicians, economists, econometricians, and the latter also at the consulted Central Planning Bureau, would not be aware of the point. The Dutch Treasury had been setting its tax since its foundation in the middle ages. Since we have seen that it is possible and also quite easy to set proper exemption and brackets, we can be quite sure that they were aware of that possibility. The main author and minister of finance Gerrit Zalm had a training as economist (though without mathematics at highschool) and his assistant minister of finance Willem Vermeend had a training as teacher of economics (not economics itself) and master of tax law. They had the ability to understand what their advisors must have told them. Now, to hold that a competent tax lawyer would not be aware of the possibility of achieving said equity by means of proper choice of exemption and brackets, as suggested above, also boggles the imagination. Thus the falsehood was deliberate. The Plan desired to have the tax credit and the falsehood was used to sell it and

make it seem rational. Why the Plan desired to have the tax credit is a mystery. It is a good guess that minister Zalm desired it, as explained above, for its potential to develop into a basic benefit that would allow the abolition of much of the Dutch welfare state. When so much is at stake, then one can understand the temptation of the silly lie.

At that time there was a discussion afternoon of the Dutch Royal Association for Political Economy (Koninklijke Vereniging voor de Staathuishoudkunde, KVS) and the Social Economic Council (SER). At that meeting I distributed the summary statement Colignatus (1998). Rick van der Ploeg, then assistant minister for culture and now at Oxford University, stated that I was right theoretically but not practically. He did not explain further. Perhaps he could explain more of this, now that we see more fraud and unemployment.

Thus, the exposition above with the dialogue and triologue of tax lawyer, mathematician and economists, should not be taken too literal. The exposition is mainly educational, intended for those who are not versed in this subject. It does not truly reflect what happened with the *Tax Plan for the 21<sup>st</sup> Century* for we must conclude that there was a deliberate lie involved. On the other hand, the exposition still has a kernel of truth, since the tax void itself is still so much neglected in policy making and (academic) studies all over the world, that we can infer a high degree of miscommunication.

A final point is why the Dutch Treasury pays out the credit at application and only later checks whether it needs to be paid back. In the past, the tax and exemption were determined on basis of the income statement, to be submitted before April 1 of year T concerning year T-1. For the payroll tax, an employer would already collect an advancement on the tax, and the income statement would allow the determination of a refund or an additional levy. When a tax credit replaces tax exemption, then this system could be continued. In itself, the tax credit is merely a mathematical transform of exemption, and the way of calculation is irrelevant for the way how the system processes the tax. Thus, it is a deliberate additional policy decision to pay out the credit on application. Why did the policy makers adopt this change? As said, a child can see that this procedure is very sensitive to fraud. On the other hand, a politician who hands out money no questions asked might achieve some popularity. One can imagine that the authors Zalm & Vermeend did not mind becoming popular. The method was adopted in 2001 with the *Tax Plan for the 21<sup>st</sup> Century* and then only affected the Treasury. In 2005 the system was broadened with various other tax credits like for housing and healthcare. This involved a shift from such Ministries, that were used to handle applications for subsidies, to the Treasury, that had to build up new expertise. One can imagine that such a shift comes with a lot of bureaucratic complexity, with a high error rate. There is an argument that deserving citizens should not be a victim of that, so that the wheels can be greased by handing out such credits at applications with no questions asked (and only a check later on). There is also another argument, that the system of tax credits has been sold with a deliberate lie, that handing out money is a seductive method for politicians to become popular, and that subsidies for specific targets like housing and healthcare better be monitored by specific Ministries that not only specify policy but have some knowledge whom that policy is for.

## **Conclusions**

(1) The basic problem in OECD countries is the tax void. (2) A tax system with an exemption is more transparent than a system with a tax credit. (3) Exemption should be at the level of the net minimum wage so that such workers can work at net = gross. (4) A tax credit is a sufficient but not a necessary condition for vertical translation of a piecewise-linear tax system. (5) The *Tax Plan for the 21<sup>st</sup> Century* of 1998-2001 contained a deliberate misrepresentation. (6) The issue is important for the current economic crisis and European unemployment: (6a) The analysis is an element in the explanation of the aggressive export policies of Northern Europe via their low wage policies. (6b) Given the similarity of the tax policies in the OECD countries we find an explanation for the Great Stagflation since 1970 that was masked by financial deregulation. (6c) One should hope that Jeroen Dijsselbloem, the Dutch minister of Finance and chairperson of the Eurogroup, understands this issue. (7) A root cause lies in the handling of economic science in Holland. Though other countries can already benefit from the analysis presented here, it still remains better that the integrity of economic science is restored in Holland so that the full analysis becomes available.

## Appendix: Requiring the same tax revenue

One might impose the condition that the tax revenues ought to be the same.

In itself this is a somewhat complex requirement, since it depends upon the distribution of earnings. It is simpler to hold on to the observations in the main body of the text. (Thus: (1) The problem is the tax void. (2) A system with an exemption is more transparent. (3) A tax credit is a sufficient but not a necessary condition for vertical translation.)

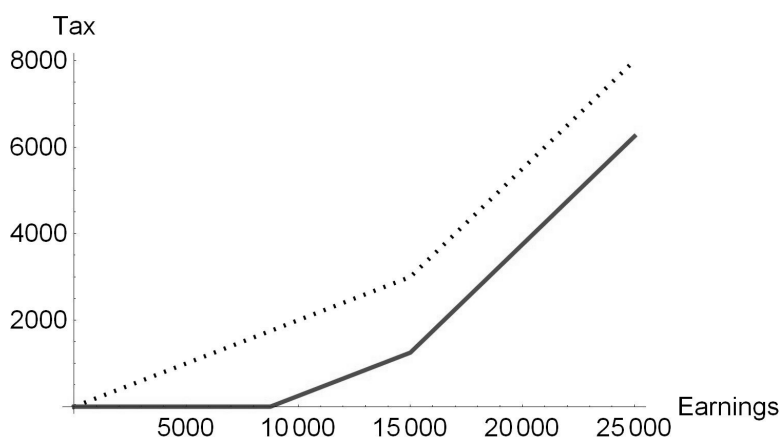
Still, for the savvy, it may be interesting to look into a case that can contribute to confusion. Let us maintain that tax revenues should be the same. Let us consider the simple case of earner *A* with EUR 10,000 and earner *B* with EUR 20,000.

Assuming the scheme of Figure 1, *A* pays 20%  $(10000 - 5000) = 1000$  and *B* pays 20%  $(20000 - 5000) = 3000$ . Total revenue is 4000.

Now, what is the system with a tax credit to use? We can choose between a vertical translation or a horizontal one.

- (I) As explained above, the vertical translation is most logical, which gives Figure 2. The tax credit is 1000. *A* pays  $20\% * 10000 - 1000 = 1000$ . And *B* pays  $20\% * 20000 - 1000 = 3000$ . Total revenue is 4000 again.
- (II) It is likely that a tax lawyer entirely neglects above explanation. Following the confusion in the legal system that the scheme for taxable income applies when exemption is set at 0, one will adopt Figure 3. In that case:  
 $A$  pays  $20\% * 10000 - c = 2000 - c$  and  
 $B$  pays  $20\% * 15000 + 50\% * (20000 - 15000) - c = 3000 + 2500 - c = 5500 - c$ .  
 Total revenue is  $7500 - 2c = 4000$ , so that  $c = 1750$ .  
 Thus *A* pays 250 and *B* 3750. This implies a huge shift in taxation.  
 Still, a tax lawyer will claim that only a system with a tax credit can achieve equity. Thus one needs to explain that this situation can also be achieved in a system with exemption. Namely, choose exemption at 8750 and the threshold for the 50% tariff at 15000m see Figure 5. Of course the situation becomes very confusing when this situation is compared to the original situation of Figure 1. How can it be that the original situation with exemption becomes another one? That's how it is: confusion breeds upon confusion.

**Figure 5: Horizontal translation of Figure 3 causes another vertical translation**



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