



Tax Evasion, Redistribution and Inequality: Observed, Actual and Potential Effects

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Documento de Trabajo 2026/09

Octubre 2026

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September 2, 2026

Abstract: The data we compute or have available on how the Personal Income Tax (PIT) contributes to reducing inequality in the distribution of income among individuals or households are usually based on reported income and the tax actually paid by taxpayers. In the presence of evasion, however, these results do not correspond to reality, because reported income does not coincide with the income actually earned by taxpayers. In this paper we show that, if the elasticity of evasion with respect to individuals' true income is greater than or equal to one, the "actual" inequality of income after the PIT (that is, inequality measured in relation to true income rather than to the income reported by taxpayers) exceeds "observed" inequality (that computed with reported income). We also discuss the conditions under which actual inequality exceeds "potential" inequality (the inequality that would obtain in the absence of evasion in the PIT), as well as the relationship between potential and observed inequality.

Keywords: Personal Income Tax, tax evasion, progressivity, redistribution, inequality.

JEL Classification: D31, D63, H26

Acknowledgements: The author acknowledges the funding of the Government of Aragon, Project S23_23R (Public Economics Research Group).

Evasión fiscal, redistribución y desigualdad: efecto observado, real y potencial

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Resumen: Los datos que calculamos o conocemos sobre cómo contribuye el IRPF a reducir la desigualdad en la distribución de la renta entre las personas o los hogares están basados habitualmente en la renta declarada y el impuesto pagado por los contribuyentes. Pero, en presencia de evasión, estos resultados no se corresponden con la realidad, porque la renta declarada no coincide con la renta realmente obtenida por los contribuyentes. En este trabajo mostramos que, si la elasticidad de la evasión con respecto a la renta verdadera de las personas es mayor o igual que uno, la desigualdad “real” de la renta después del IRPF (esto es, la desigualdad medida en relación con la renta real y no con la declarada por los contribuyentes) es mayor que la desigualdad “observada” (la calculada con la renta declarada). También se discute bajo qué condiciones la desigualdad real es mayor que la desigualdad “potencial” (la que podría alcanzarse en ausencia de evasión en el IRPF), así como la relación entre la desigualdad potencial y la observada.

Palabras clave: IRPF, evasión, progresividad, redistribución, desigualdad.

1. Introduction

Both the level of evasion and its distribution across individuals affect the measurement of the PIT's contribution to reducing inequality in the income distribution. The redistributive effect of the PIT is usually calculated with reference to taxpayers' reported income, which, following Freire-Serén and Panadés (2008), we term the "observed" effect. In fact, however, the tax does not affect reported income but rather the income actually earned by taxpayers, that is, their true income. This effect, which we identify as the "actual" effect, is the one that properly reflects the redistributive effect of the PIT in the presence of evasion. In this paper we examine whether the measurement of observed PIT redistribution under- or overestimates the actual redistributive effect, and whether either is larger or smaller than the redistribution that could be attained in the absence of evasion, which we term the "potential" redistributive effect.

Two reference papers on this subject are closely related to the present research. Within the framework of the Allingham and Sandmo (1972) tax evasion model, and assuming a proportional PIT, Kakwani (1978) shows that, if individuals exhibit decreasing (increasing) relative risk aversion, the distribution of their reported income will be Lorenz superior (inferior) to the distribution of true income; that is, reported income will be more equally (unequally) distributed than true income. Under the same risk-aversion assumption, the distribution of expected income after the PIT (and penalties), in the case of evasion, will be Lorenz inferior (superior) to the distribution of the pre-tax true income.

Also within the framework of the Allingham and Sandmo (1972) tax evasion model, but assuming a progressive PIT, Freire-Serén and Panadés (2008) obtain the following results. First, if relative risk aversion is decreasing (increasing), the distribution of income after the PIT in the absence of evasion is Lorenz superior (inferior) to the distribution of expected after-tax income with evasion. Second, the distribution of income after the PIT in the absence of evasion is Lorenz superior to after-tax reported income in the presence of evasion, provided that the degree of absolute risk aversion is constant or increasing, or the degree of relative risk aversion is constant.

The aim of the present paper is to complete and extend these earlier results by comparing observed, actual and potential PIT progressivity, first using measures of local, or structural, progression (Sections 2 and 3), and then measuring global, or effective, progression by applying the Lorenz-curve approach (Section 4). Our approach need not be explicitly linked to any theoretical model of evasion, since it only requires observing the outcomes of individuals' decisions in terms of income and tax paid. As in the earlier studies, our results underscore the importance of how evasion behaves as individuals' true income varies.

2. Potential, Observed and Actual Local Progression

Suppose that an individual has true income X . Under the PIT, they report a part X_d of it and evade a part $e(X)$, which depends on their true income, $0 \leq e(X) < X$:

$$(1) \quad X = X_d + e(X)$$

We rule out horizontal heterogeneity in evasion (for example, across income sources) and assume perfect rank correlation between true income and each of its components. Mean evasion is $e^*(X) = \frac{e(X)}{X}$, with $0 \leq e^*(X) < 1$. Marginal evasion is $e'(X) = \frac{de(X)}{dX}$, with $0 \leq e'(X) < 1$. The elasticity of evasion with respect to true income is $\varepsilon_e = \frac{d e(X)}{dX} \cdot \frac{X}{e(X)} = \frac{e'(X)}{e^*(X)}$. The elasticity of reported income with respect to true income is therefore $\varepsilon_{X_d} = \frac{dX_d}{dX} \cdot \frac{X}{X_d} = \frac{1-e'(X)}{1-e^*(X)}$.

We quantify the local, or structural, progression of the PIT under three scenarios, using Liability Progression, LP , and Residual Progression, RP (Lambert, 2001). We first compute the “potential” progressivity of the tax, that is, the progressivity that would obtain in the absence of tax evasion; second, “observed” progressivity; and third, “actual” progressivity.

Potential progressivity is that of an income tax $t(X)$ if individuals reported their true income, X . The average PIT rate would then be:

$$t^*(X) = \frac{t(X)}{X} \geq 0$$

And the marginal tax rate:

$$t'(X) = \frac{dt(X)}{dX} > 0, \text{ with } t''(X) \geq 0.$$

We assume that the PIT is locally progressive and redistributive, meaning that residual progression is less than one:

$$(2) \quad RP_X = \frac{1-t'(X)}{1-t^*(X)} < 1, \forall X$$

Suppose now that individuals evade a part $e(X)$ of their true income. We compute the observed progression of the PIT paid, $t(X_d)$, which is computed on reported income, X_d . The PIT liability is then determined as follows:

$$t(X_d) = t(X - e(X))$$

The difference $t(X) - t(X_d)$ represents the tax saving associated with evasion.

The observed average rate:

$$t_o^*(X_d) = \frac{t(X_d)}{X_d} = t^*(X_d) \geq 0$$

And the observed marginal tax rate:

$$t'_O(X_d) = \frac{dt(X_d)}{dX_d} = t'(X_d) \leq t'(X)$$

Since $t'(X_d) > t^*(X_d)$, the tax will be locally progressive and redistributive when measured relative to taxpayers' reported income:

$$(3) \quad RP_{XO} = \frac{1-t'_O(X_d)}{1-t^*(X_d)} = \frac{1-t'(X_d)}{1-t^*(X_d)} < 1, \forall X$$

The observed effects of the PIT on the income distribution are not, however, the actual effects. To determine the latter, we must examine the effect of the tax paid $t(X_d)$ on individuals' true income, X , rather than on the income they report, X_d . The actual average and marginal tax rates are, respectively, as follows:

$$t_A^*(X_d) = \frac{t(X_d)}{X} = t^*(X_d) \cdot \frac{X_d}{X} = t^*(X_d) \cdot (1 - e^*(X))$$

$$t'_A(X_d) = \frac{dt(X_d)}{dX} = t'(X_d) \cdot (1 - e'(X))$$

In this scenario, the PIT will be locally progressive and redistributive if:

$$RP_{XA} = \frac{1 - t'_A(X_d)}{1 - t_A^*(X_d)} = \frac{1 - t'(X_d) \cdot (1 - e'(X))}{1 - t^*(X_d) \cdot (1 - e^*(X))} < 1, \forall X$$

This inequality will hold if:

$$t'(X_d) \cdot (1 - e'(X)) > t^*(X_d) \cdot (1 - e^*(X))$$

That is:

$$(4) \quad LP_{XO} = \frac{t'(X_d)}{t^*(X_d)} > \frac{1 - e^*(X)}{1 - e'(X)} = \frac{1}{\varepsilon_{Xd}}$$

Where LP_{XO} is the observed liability progression. Since the left-hand side of the inequality is greater than one, a sufficient (though not necessary) condition for (4) to hold is that the right-hand side be less than or equal to one; or, equivalently, that the elasticity of evasion with respect to true income be less than or equal to one ($e'(X) \leq e^*(X)$). Analogously, a necessary (though not sufficient) condition for the PIT to be locally regressive or proportional according to this indicator ($RP_{XA} \geq 1$) is that the elasticity of evasion with respect to true income be greater than one: $e'(X) > e^*(X)$.

In short, the PIT is locally progressive and redistributive when progression is measured on an observed or potential basis, but may not be so when measured on an actual basis.

3. Comparing the Scenarios

Our main objective is to determine whether the progression attributed to the PIT in the presence of evasion — that is, observed progression — is greater or smaller than the progression the tax is actually producing, taking into account taxpayers' true income. We begin by comparing these two scenarios and then complete the analysis by comparing, in turn, potential progression with actual and observed progression.

3.1. Observed versus Actual Progression

For observed residual progression to be smaller than actual residual progression — and, hence, for observed local progression to exceed actual local progression — it must hold that:

$$RP_{XO} = \frac{1 - t'(X_d)}{1 - t^*(X_d)} < \frac{1 - t'(X_d) \cdot (1 - e'(X))}{1 - t^*(X_d) \cdot (1 - e^*(X))} = RP_{XA}, \forall X$$

This inequality will hold if:

$$(5) \quad \varepsilon_e = \frac{e'(X)}{e^*(X)} > \frac{t^*(X_d)}{t'(X_d)} \cdot \frac{1 - t'(X_d)}{1 - t^*(X_d)}$$

If $RP_{XA} \geq 1$, this condition shall be fulfilled in any case, because, as shown above, $RP_{XO} < 1$. If $RP_{XA} < 1$, we can derive a sufficient condition for (5) to hold. The right-hand side of the inequality is less than one, since both of its ratios are less than one. A sufficient (though not necessary) condition for the inequality to hold is therefore that the left-hand side be greater than or equal to one, that is, that the elasticity of evasion with respect to true income be greater than or equal to one: $e'(X) \geq e^*(X)$.

Proposition 1.

In the presence of evasion, if the PIT is actually progressive, as measured by residual progression, and the elasticity of evasion with respect to true income is greater than or equal to one ($\varepsilon_e \geq 1$), then:

$$RP_{XO} < RP_{XA}.$$

The above inequality also holds if the PIT is actually proportional or regressive.

That is, in the presence of evasion, the actual residual progression of the PIT exceeds (and hence its local progressivity falls short of) the observed progression.

3.2. Potential versus Actual Progression

For potential residual progression to be lower than actual residual progression (and, hence, for the PIT to be locally more progressive), it must hold that:

$$(6) \quad RP_X = \frac{1-t'(X)}{1-t^*(X)} < \frac{1-t'_A(X_d)}{1-t^*_A(X_d)} = \frac{1-t'(X_d) \cdot (1-e'(X))}{1-t^*(X_d) \cdot (1-e^*(X))} = RP_{XA}, \forall X$$

If $RP_{XA} \geq 1$, the above condition shall be fulfilled in any case, because $RP_X < 1$. If $RP_{XA} < 1$, whether this inequality holds depends on the structure of the PIT schedule, the behavior of evasion with income, and the interaction between the two factors, which prevents us from obtaining a general ranking of the scenarios. We therefore adopt a different strategy. Since both scenarios refer to the same pre-tax true income, X , we can compare them in terms of liability progression, LP , and use the result later, in Section 4.2, to compare potential and actual inequality in income after the PIT. For potential liability progression to exceed actual liability progression, it must hold that:

$$LP_X = \frac{t'(X)}{t^*(X)} > \frac{t'_A(X_d)}{t^*_A(X_d)} = \frac{t'(X_d) \cdot (1-e'(X))}{t^*(X_d) \cdot (1-e^*(X))} = LP_{XA}, \forall X$$

Or, equivalently:

$$(7) \quad \varepsilon_{Xd} = \frac{1-e'(X)}{1-e^*(X)} < \frac{t'(X)}{t^*(X)} \cdot \frac{t^*(X_d)}{t'(X_d)} = \frac{LP_X}{LP_{XO}}$$

That is, the elasticity of reported income with respect to true income must be smaller than the change in liability progression induced by evasion. If observed PIT progression exceeds potential progression ($LP_X < LP_{XO}$), a necessary (though not sufficient) condition for (7) to hold is that the elasticity of reported income with respect to true income be less than one: $\varepsilon_{Xd} < 1$; equivalently, that the true-income elasticity of evasion be greater than one: $\varepsilon_e > 1$. If observed PIT progression is smaller than potential progression ($LP_X > LP_{XO}$), a sufficient (though not necessary) condition for (7) to hold is that the elasticity of reported income with respect to true income be less than or equal to one: $\varepsilon_{Xd} \leq 1$; that is, that the true-income elasticity of evasion be greater than or equal to one: $\varepsilon_e \geq 1$. Finally, if observed PIT progression equals potential progression ($LP_X = LP_{XO}$), a necessary and sufficient condition for (7) to hold is that the elasticity of reported income with respect to true income be less than one: $\varepsilon_{Xd} < 1$; that is, that the true-income elasticity of evasion be greater than one: $\varepsilon_e > 1$. As can be seen, the fulfilment of (7) is strongly associated with a true-income elasticity of evasion greater than one.

The Appendix shows that, if the tax schedule has continuous marginal tax rates, $\varepsilon_e \geq 1$ is a sufficient condition for $RP_X < RP_{XA}$.

3.3. Potential versus Observed Progression

Potential residual progression of the PIT will be smaller than observed residual progression when:

$$RP_X = \frac{1 - t'(X)}{1 - t^*(X)} < \frac{1 - t'(X_d)}{1 - t^*(X_d)} = RP_{XO}, \forall X$$

Once again, no further general condition can be obtained without imposing specific assumptions on the tax schedule or the evasion function. Alternatively, we write observed residual progression in terms of actual progression:

$$RP_X = \frac{1 - t'(X)}{1 - t^*(X)} < \frac{1 - \frac{t'_A(X_d)}{1 - e'(X)}}{1 - \frac{t'_A(X_d)}{1 - e^*(X)}} = RP_{XO}, \forall X$$

That is:

$$(8) \quad \frac{1 - t'(X)}{1 - t^*(X)} \cdot \frac{1 - e'(X)}{1 - e^*(X)} < \frac{1 - e'(X) - t'_A(X_d)}{1 - e^*(X) - t'_A(X_d)}$$

If the elasticity of evasion with respect to true income is greater than or equal to one, the left-hand side of the above expression will be less than one, since both of its ratios are less than one. A sufficient (though not necessary) condition for inequality (8) to hold is therefore that the ratio on the right-hand side be greater than or equal to one, that is:

$$(9) \quad e'(X) - e^*(X) \leq t'_A(X_d) - t'_A(X_d)$$

Since the left-hand side of (9) is greater than or equal to zero, for the above inequality to hold the PIT must be actually regressive or proportional. Note, however, that, according to (4), actual proportionality or regressivity of the PIT requires the elasticity of evasion with respect to true income to be greater than one, and hence $e'(X) - e^*(X) > 0$, so that the PIT must be actually regressive for (9) to hold.

Proposition 2.

If, as measured by residual progression, the PIT is actually regressive ($RP_{XA} > 1$), then:

$$RP_{XO} < RP_{XA}$$

$$RP_X < RP_{XA}$$

If it also holds that $t'_A(X_d) - t'_A(X_d) \geq e'(X) - e^(X) > 0$, then it will additionally hold that:*

$$RP_X < RP_{XO}$$

And, therefore:

$$RP_X < RP_{XO} < RP_{XA}$$

Consequently, although we cannot rank the three scenarios in general, we can do so when evasion turns the PIT into an actually regressive tax, according to the local progression measures.

4. Effective Progression: Changes in Observed, Actual and Potential Inequality

We now compare the Lorenz curves of pre- and post-PIT income inequality, and the redistributive effect of the tax, in each of the three scenarios examined in the preceding sections, under the assumption that the elasticity of evasion with respect to true income is greater than or equal to one, so that the distribution of reported income will be Lorenz equal to or superior to the distribution of true income:

$$L_{Xd}(p) \geq L_X(p)$$

We know that potential and observed residual progression are both less than one, so that the potential and observed redistributive effects will be positive (Fellman, 1976; Jakobsson, 1976). Hence, respectively:

$$L_{X-T}(p) > L_X(p) > L_T(p)$$

$$L_{Xd-Ta}(p) > L_{Xd}(p) > L_{Ta}(p)$$

Actual residual progression is not theoretically determined, and hence neither is the actual redistributive effect.

4.1. Observed versus Actual Inequality

As in the previous section, we are chiefly interested in comparing observed and actual inequality. To this end, we draw on the results of Rietveld (1990). Given income $z = u + v$, if the rank correlation between total income and each of its components equals unity, then:

$$L_z(p) = \frac{\bar{u}}{\bar{z}} L_u(p) + \frac{\bar{v}}{\bar{z}} L_v(p),$$

where $\bar{u}$, $\bar{v}$ and $\bar{z}$ are the respective mean incomes; and the inequality of total income will not exceed that of the most unequally distributed component.

We decompose true income after the PIT paid in the presence of evasion into the following components:

$$X - t(X_d) = (X_d - t(X_d)) + (e(X) - 0),$$

where, by definition, the tax on evaded income is zero. The most unequally distributed component is $(e(X) - 0)$, since:

$$L_{Xd-Ta}(p) > L_{Xd}(p) \geq L_e(p) = L_{e-Te}(p)$$

Consequently, if perfect rank correlation holds, then it will also hold that:

$$(10) \quad L_{Xd-Td}(p) > L_{X-Td}(p), \forall p$$

That is, in the presence of evasion, observed post-PIT inequality will be smaller than actual post-PIT inequality. Equation (10) also holds when $RP_{XA} \geq 1$.

Proposition 3.

If the elasticity of evasion with respect to true income is greater than or equal to one ($e'(X) \geq e^(X)$), then:*

$$L_{Xd-Td}(p) > L_{X-Td}(p), \forall p$$

If the elasticity of evasion with respect to true income is greater than one, we cannot determine whether the observed redistributive effect is larger or smaller than the actual effect. If the elasticity equals one, then it will hold that $L_{Xd}(p) = L_X(p)$ and $ER_{XO} > ER_{XA}$.

4.2. Potential versus Actual Inequality

We next compare actual and potential inequality. Since the pre-PIT income distribution is the same in both scenarios, if, in accordance with (7), it holds that $LP_X > LP_{XA}$, then it will also hold that potential effective progression exceeds actual effective progression (Jakobsson, 1976; Kakwani, 1977):

$$LP_X > LP_{XA}, \forall X \Leftrightarrow L_{Td}(p) > L_T(p)$$

Since the effective average tax rate without evasion exceeds that with evasion, both computed on true income, and no reranking effect occurs, it will hold that the potential redistributive effect exceeds the actual redistributive effect (Kakwani, 1977):

$$ER_X = L_{X-T}(p) - L_X(p) > L_{X-Td}(p) - L_X(p) = ER_{XA}$$

And, therefore:

$$(11) \quad L_{X-T}(p) > L_{X-Td}(p), \forall p$$

Consequently, post-PIT income inequality in the absence of evasion would be smaller than the inequality actually attained in the presence of evasion. Equation (11) also holds when $RP_{XA} \geq 1$.

The Appendix shows that, if the PIT schedule is continuous, greater potential local progression implies lower potential post-tax inequality and, consequently, a larger potential redistributive effect.

4.3. Potential versus Observed Inequality

Finally, we compare observed and potential inequality. According to Theorem 5.1 of Lambert and Pfähler (1992), if pre-tax income X_1 undergoes an inequality-increasing or inequality-neutral increase, such that income after the change is $X_2 = k(X_1)$, with $k'(X_1) > 0, \forall X$ (which ensures that everyone maintains their rank in the distribution), and a different tax is applied to each income, respectively T_1 and T_2 ; then the redistributive effect of the tax after that increase will exceed the effect before the change if the following relation holds between residual progression before and after the increase in income ($RP_1(X_1)$ and $RP_2(X_2)$, respectively):

$$RP_2(X_2) < RP_1(X_1)/g(X_1), \forall X$$

where $g(X_1)$ is the elasticity of $k(X_1)$ with respect to X_1 .

In our case, $X_1 = X_d$, $X_2 = X = k(X_d) = X_d + e(X)$ and the change between them is inequality-increasing or inequality-neutral, since the elasticity of evasion with respect to true income is greater than or equal to one. Moreover: $T_1 = t(X_d)$ and $T_2 = t(X)$.

The elasticity of $k(X_d)$ with respect to X_d is:

$$g(X_d) = \frac{k'(X_d)}{k^*(X_d)} = \frac{1 - e^*(X)}{1 - e'(X)} \geq 1$$

It must therefore hold that:

$$RP_X < RP_{X0} \cdot \frac{1 - e'(X)}{1 - e^*(X)}, \forall X$$

That is:

$$(12) \quad \varepsilon_{Xd} = \frac{1 - e'(X)}{1 - e^*(X)} > \frac{RP_X}{RP_{X0}}$$

Under our initial assumption, the left-hand side of the above expression is less than or equal to one. A necessary (though not sufficient) condition for (12) to hold is therefore that the ratio on the right-hand side be less than one, and hence: $RP_X < RP_{X0}$.

If condition (12) holds, the potential redistributive effect of the PIT will exceed the observed effect:

$$ER_X = L_{X-T}(p) - L_X(p) > L_{Xd-Td}(p) - L_{Xd}(p) = ER_{X0}$$

Or, equivalently:

$$L_{X-T}(p) - L_{Xd-Td}(p) > L_X(p) - L_{Xd}(p), \forall p$$

If the elasticity of evasion with respect to true income is greater than one, the right-hand term will be negative, so we cannot determine whether observed post-PIT income inequality is larger or smaller

than potential inequality. If the elasticity equals one ($e'(X) = e^*(X)$), the right-hand side will equal zero, so that the left-hand side must be positive, from which:

$$(13) \quad L_{X-\tau}(p) > L_{Xd-\tau d}(p)$$

This means that potential post-tax income inequality will be smaller than observed inequality, in line with Proposition 3 of Freire-Serén and Panadés (2008), who obtain this result when relative risk aversion is constant.

5. Concluding Remarks

The data we compute or have available on how the PIT contributes to reducing inequality in the distribution of income among individuals or households are usually based on reported income and the tax paid by taxpayers. In the presence of evasion, however, these results do not correspond to reality, because reported income does not coincide with the income actually earned by taxpayers. The discrepancy between true and reported income will depend on how evasion changes as individuals' true income changes. This problem in measuring inequality and the redistributive effect of taxes in the presence of evasion will be greater when the information used for the distributive analysis is drawn from tax records, since it only depends on the data provided by taxpayers, than when it is drawn from national accounts.

In this paper we have shown that, if the elasticity of evasion with respect to individuals' true income is greater than or equal to one, the actual inequality of post-tax income (that is, inequality measured in relation to true income rather than to the income reported by taxpayers) exceeds observed inequality (that computed with reported income). We have also discussed the conditions under which actual inequality exceeds potential inequality (the inequality that would obtain in the absence of evasion in the PIT), as well as the relationship between the latter and observed inequality.

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Appendix. Comparison of Potential and Actual Progression, Local and Effective, for a Tax Function $t(X) \in \mathcal{C}^2$

Suppose that the tax function is twice continuously differentiable ($t(X) \in \mathcal{C}^2$), so that the marginal tax rate is continuous and the mean value theorem can be applied to t and t' . We start from the expression for the tax actually paid:

$$t(X_d) = t(X - e(X))$$

Applying the mean value theorem, there exists a point $\xi(X) \in [X - e(X), X]$, such that:

$$t(X_d) = t(X) - t'(\xi(X)) \cdot e(X)$$

so that the actual average tax rate can be written as:

$$t_A^*(X_d) = t^*(X) - t'(\xi(X)) \cdot e^*(X)$$

To obtain the actual marginal tax rate, we apply the mean value theorem to the marginal tax function. There exists a point $\zeta(X) \in [X - e(X), X]$, such that:

$$t'(X_d) = t'(X) - t''(\zeta(X)) \cdot e(X)$$

And the actual marginal tax rate is then:

$$t'_A(X_d) = [t'(X) - t''(\zeta(X)) \cdot e(X)] \cdot (1 - e'(X))$$

Substituting the average and marginal rates into condition (6), potential residual progression will be lower than actual progressivity if, for all X , it holds that:

$$\begin{aligned} & [t'(X) \cdot e'(X) \cdot (1 - t^*(X)) - t'(\xi(X)) \cdot e^*(X) \cdot (1 - t'(X))] + t''(\zeta(X)) \cdot e(X) \cdot (1 - e'(X)) \\ & \cdot (1 - t^*(X)) > 0 \end{aligned}$$

Since the second term on the left-hand side of this inequality is non-negative, a sufficient condition for it to hold is that the elasticity of evasion with respect to true income be greater than or equal to one, since in that case the bracketed term on the left-hand side will also be positive.

Furthermore, if it holds that $RP_X < RP_{XA}$, it will also hold that the inequality of income after the PTT in the absence of evasion will be smaller than the inequality actually attained in the presence of evasion (Jakobsson, 1976; Kakwani, 1977):

$$RP_X < RP_{XA}, \forall X \Leftrightarrow L_{X-T}(p) > L_{X-Td}(p)$$

And, therefore, the potential redistributive effect will exceed the actual effect:

$$ER_X = L_{X-T}(p) - L_X(p) > L_{X-Td}(p) - L_X(p) = ER_{XA}$$