EUROGREEN Model

Fiscal Policies, Redistribution and the Potential Role of European Investment Bank

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Acknowledgments

This research was commissioned by Yannick Jadot, Florent Marcellesi and Philippe Lamberts – Greens | EFA Group at the European Parliament. We would like to express our deepest appreciation to all them and to Olivier Derruine for supporting this work. We would like to thanks all the participants of the 6^{th} *International De-Growth Conference*, held in Malmö, and of the *Post-Growth Conference*, held at the European Parliament, for their precious and multifaceted contributions. We also thank Gaël Giraud who contributed to the introduction of the fiscal policy reform. A special thanks goes to the members of the Research & Degrowth academic association who support us throughout the implementation of the project. Last but not least, many thanks go to Mathias Legrand and all the other developers for providing the basic template of this report – *The Legrand Orange Book*.

Supplementary Information, April 2019

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Executive Summary

Executive Summary

The EUROGREEN Report, published online on October 2018,[1] discussed the viability, effectiveness, and possible synergies among alternative policy measures to cope with low-carbon transition and social justice together. The methodology employed is a system dynamics input-output model which allows to envision eventual trade-offs between the social, economic, and environmental dimensions. Numerical simulation scenarios were run to evaluate the direct and indirect effects of each policy intervention in France, from 2014 to 2050. The Report presented three main scenarios (i.e., *three policy mixes*) coming out from the alternate application of **six single policies** and identifies its pros and cons. For the sake of clarity, we recall the characteristics of each policy mix:

- **Green Growth (GG)**: included *New Productive Revolution*, *Energy Mix*, and *Carbon Tax and Border Carbon Adjustment* policies. The main driver of transition is based on the (fast) pace of technological progress both in energy and labour-saving technologies together with the introduction of renewable energy production and market incentives to cleaner production in the form of carbon taxes.
- **Policies for Social Equity (PSE)**: this scenario combined *GG* with social policies, such as *Job Guarantee* (JG) and *Working Time Reduction* (WTR). It also considered an acceleration of technical progress on energy efficiency but not on labour saving technologies.
- **De-Growth (DG)**: this policy mix added to the **PSE** the effects of de-growth in private consumption and exports, together with a higher *wealth tax*.

The main outcomes suggested that there might exist alternative paths for environmental sustainability, since each of these policy-mix are able to drastically curb CO_2 emissions. However, simulations highlighted that only through direct bold social policies – i.e., *JG* and *WTR* – are able to significantly tackle income inequality. Indeed, technological progress alone fosters the reduction of GHG emissions but it aggravates unemployment and inequality. The simulated scenarios indicated

[1] The full Report is freely available online at the following website address: `https://people.unipi.it/simone_dalessandro/wp-content/uploads/sites/78/2018/10/EUROGREEN_Project.pdf`.

the presence of possible synergies between social and environmental policies to cope with the significant structural changes needed in a post-growth society.

In what follows, we extend the previous analysis considering additional, more directed policies for income redistribution and incentives to clean technologies. In this respect, we define an alternative **fiscal taxation program** (characterized by a greater number of income brackets and more progressive marginal tax rates) and the potential role played by the **European Investment Bank** (*EIB*) in funding investments in renewable energy production.

In order to provide a clear picture, we simulate the impact of the *fiscal policy reform* (*FPR*) proposed in the current report and of the *EIB* policy and compare them to a reference scenario (Baseline). For the sake of completeness, we also assess their joint impact together with two of the previous policy mixes: *GG* and *PSE*. The key messages emerging from this study are:

- The *FPR* projects a remarkable distributional effect. In each scenario the inequality decreases at least of two Gini-points.
- The *FPR* generates significant impacts on income distribution, in general, and on the labour market, in particular. A more progressive taxation of employed workers results in a wider range of average tax rates from 15 (lower) to 50% (higher-income individuals) of labour income, as compared to a rage between 25-35% in the baseline scenario. Higher-wage workers face higher tax rates and low-income workers are met with lower average taxes.
- The cost of *FPR* is not sizable in terms of public expenditure, with only marginal increases of the government's deficit -to-GDP ratio due to the implementation of the tax reform. However, the public deficit is significantly higher after the *FPR* (around 4.5% of GDP) if it is implemented together with the *PSE* policy-mix. since the Deficit to GDP ratio remains stable with respect to the Baseline. Only in case of *PSE*. The tax reform is designed such that it is revenue-neutral at the year of its introduction in the simulated scenarios.
- *EIB* incentives to renewable energy investments increase the renewable share of energy production by 3% (in 2050) with respect to the baseline scenario, by directly contributing to the GHG emissions reduction of approximately 2.8%. The small size of the improvement is due to the assumption of a complementarity between investments in traditional sectors and in renewable energy source.
- Relaxing the complementarity assumption has a significant effect on GHG emission reduction (10% w.r.t. the Baseline). In this case, the share of renewable energy source on TPES increases by a 7% w.r.t. the previous scenario.

In this report we did not replicate the Degrowth scenario, since households' consumption reduction calls for conceptually different fiscal policies which was briefly discussed in the previous EUROGREEN report. Furthermore, GG and PSE scenarios with the two additional policies presented in this document, reach the EU target in GHG emission reduction. However, if, as suggested by the last IPCC report, our societies have to reach a more ambitious goal to maintain the surface temperature increase below the 1.5 degree, the feasibility of sustainable growth is still under discussion. Note that our scenarios result in a quite low GDP rate of growth (below the 1%). With higher growth the window of sustainability would be significantly narrower.

Fiscal Policy and Green Finance

1. Fiscal Policies

Income inequality and the concentration of wealth, over the last decades, have attracted the attention of scholars and public institutions. Recent studies showed a rise of top income and wealth shares in nearly all developed countries in recent decades, even though different intensities across countries suggest that different institutional settings have the capacity to shape income distribution (Alvaredo, 2017). In France the richest 0.01% of adult population experienced a cumulative increase of its pre-tax income of more than 160% between 1983-2014, earning about 4.5 €million per year in 2014 which is 129 times the average national income (Garbinti et al., 2018). Most of the recent literature agrees that the changes observed over time in income distribution is not inescapable but depends on institutions and public policies (Atkinson et al., 2011; Piketty and Zucman, 2014; Garbinti et al., 2018).

This evidence corroborates previous results from the EUROGREEN model which showed the emerging trade-offs between greenhouse gas emissions and income inequality under alternative policy mixes. Given the potential of public policies to address the increasing economic divide within nations this section assesses the distributional effects of alternative fiscal settings. In particular, we simulate scenarios with an increased progressiveness in income taxation. It includes a greater number of income brackets, more progressive income tax rates (tax B), a substitution of flat taxes for additional progressive taxes (tax A) and higher taxation on wealth of top earners. The new, more progressive, tax rate schedules presented in the following section are revenue neutral. That is, they are set such that government tax revenue in the begging of the simulation window is the same in the baseline scenario and after the new fiscal policies are introduced.

1.1 Methodology

The previous version of the EUROGREEN model was based on the income taxation as currently applied in France. Table 1.1 summarizes the individual tax rates applied in our baseline scenario.

Table 1.1: *French individual tax system in 2014.*

Tax	**Description**	**Tax rate**	**Tax-payer**
A	combines the *contribution sociale généralisée* and the *contribution au remboursement de la dette sociale* into a single flat tax levied on the 98.25% of gross pay	9.7% for employed; 8.8% for retired; 6.7% for unemployed;	workers, pensioners, unemployed
B	progressive income taxation	see Table 4.2 page47 of the previous Report	workers, pensioners, unemployed
D613	compulsory social security contributions	14% of gross wages; 7.3% of gross pensions; 5.3% of unempl. benefits	workers, pensioners, unemployed
Capital Gains	applied on revenues from financial investment in: bonds, equities, and deposits	flat tax of 30%	working class and capitalists
Whealth	applied on the whole stock of wealth	flat tax of 0.15‰	working class and capitalists

The main novelty introduced in the *fiscal policy reform* (*FPR*) simulations is the establishment of more granular income tax brackets with different marginal tax rates, which are applied both to the taxes of type A and B[1]. Table 1.2 reports the new tax system setting that is applied from 2020 onward. Note that these tax rates are revenue-neutral in 2020, the year in which the fiscal policy reform is introduced in our scenario. Still, the feedback effects on disposable income and final demand generate different paths in the public deficit and in the GDP growth afterwards. In other words, the different patterns of income distribution induced by the change in taxation later affect public revenue, expenditure and GDP thus changing the profile of government's deficit-to-GDP ratio. Note that, in order to take into account the inflationary dynamic, we update the income floors based on the yearly average nominal wages. Finally, we introduce a wealth tax rate of 1% to be payed by the capitalists, which constitute the top 0.1% wealthiest stratum of the population.

[1]The former, tax A, shifts from a flat tax to a progressive one.

Table 1.2: *Fiscal Policy with alternative tax system setting from 2020 onward.*

Income Floors	**Fraction of taxable income (€)**	**Tax B rate in 2014 (%)**	**New Tax B rate (%)**	**New Tax A rate (%)**
Bracket 1	0 – 9,690	*0*	***0***	***0***
Bracket 2	9,690 – 18,227	*14*	***11.2***	***6.0***
Bracket 3	18,227 – 26,764	*14*	***19.8***	***13.0***
Bracket 4	26,764 – 49,259	*30*	***33.0***	***27.0***
Bracket 5	49,259 – 71,754	*30*	***42.6***	***30.0***
Bracket 6	71,754 – 111,855	*41*	***53.3***	***35.0***
Bracket 7	111,855 – 151,956	*41*	***60.2***	***35.0***
Bracket 8	151,956 – 192,057	*45*	***67.5***	***40.0***
Bracket 9	192,057 – 232,158	*45*	***71.2***	***45.0***
Bracket 10	Above 232,158	*45*	***80.0***	***50.0***

2. European Investment Bank

The European Investment Bank (EIB) has promoted several types of investments in France, since 1959. In 2018, the volume of investments financed in its core sectors were of about *infrastructure* 582 million Euros in infrastructure projects, 2,325 for small and medium enterprises (*SME*), 1,700 in *environmental* projects, and 2,540 for the promotion of *innovation*[1]. Overall, the EIB supported about 2% of total investments in France in 2018. This percentage is not irrelevant *per se* but also signal Europe's interest in funding strategic sectors or projects and might crowd-in private funding to such objectives. We focus on the possible role of the EIB in boosting green investments in renewable energy and its direct impact the reduction of CO_2 emissions.

2.1 Methodology

The introduction of EIB policy for renewable energy development required a small change in the previous EUROGREEN model. We explicitly include the accumulation of renewable capital in the current version of the model. According to the available data, renewable installed capacity approximately increased from 40 to 50 GW between 2014 and 2018 (IRENA, 2018). Investments in renewable capacity were of about 2.5 billion Euro in 2014. In the Baseline scenario, we assume that investments in renewable energy follow their current trend and slightly decline in the absence of specific policies.

Despite the increase in renewable energy capacity over the last 5 year, the financial restrictions to its further expansion is well documented (Ghisetti et al., 2017, e.g.). The European Investment Bank can contribute to relax funding constraints in sectors not well covered by private banks such as renewable energy investments. The EIB policy in our model boosts in the availability of funds for renewable energy at the expense of more traditional sectors whose. The EIB policy is modelled in two parts. The first (i) restricts investments in traditional, non renewable sectors, to mimic the fact that the EIB must restrict resources devoted to other objectives in order to boost funds for renewable energy. The second (ii) simply increases the funds available for environmental friendly investments.

[1] See `https://www.eib.org/en/projects/regions/european-union/france/index.htm` for more details.

In the EUROGREEN model, investments in capital accumulation depend on the rate of profit and capacity utilization. Moreover, the financing of investment is constrained by the amount of accumulated profits, which determine the maximum investment an industry is able to perform given a fixed equity-to-debt ratio. Hence, an industry's self-financing capacity establishes the ceiling for its investments in each period. Once the EIB reduces available resources, this maximum level of investment slightly decline (i.e. equity-to-debt ratio increases). Alternatively, an increase in EIB resources for renewable energy investments reduce the self-financing requirements and thus should foster larger investments in renewable energy. However, if an industry makes enough profits, such change does not affect its level of investment. On the other hand, if an industry has low profits, the EIB policy can limit the financing capacity of non-renewable investments in some less profitable industries.

In 2014, renewable energy investments accounted for 1% of total investments in traditional sectors. For the sake of simplicity we assume that, with the intervention of EIB, this share will increase by 10%. Therefore this framework generates a possible trade-off in the EIB policy. If the change in the allocation of resources affects the attainable level of investment, its reduction can be such that the fall in total, including renewable, investments by traditional sectors surpasses the 10% increase in renewable energy investment fostered by the EIB policy.

Alternatively, EIB intervention can also foster a direct increase in renewable investment (policy *ii*. above) which is independent of the level of investments of the traditional sectors. We briefly explore this other possibility in the last section of the report which induces an increase of approximately 30% of renewable energy production with respect to the previous assumption at the end of the simulation period. This extension represents the sensitivity analysis on the contribution of EIB in GHG emissions reduction.

3. Results

This Section presents the main results from the introduction of the *fiscal policy reform* (*FPR*) and from the incentives towards green investment financed by the *EIB*. For the sake of clarity, we evaluate their long-run consequences in isolation compared with the Baseline scenario. Their joint application with GG and PSE policy mixes is analyzed in the next section. The first graphs below show the impacts of **FPR** and **EIB** on some of the main macro-economic indicators of the model. The following figures then focus on the re-distributive effect on the labour market and on the overall individual pre-tax income due to the fiscal reform.

Figure 3.1 shows the dynamic of the main socio-economic and environmental indicators, such as: the *Gini* coefficient which measures the social inequality from an income-side perspective (the higher the inequality the higher the Gini index), GHG emissions reduction compared with the 1990's level, the government's deficit-to-GDP ratio to evaluate the fiscal sustainability, and the GDP growth rate.

From the social point of view the impact of the *FPR* is remarkable. Top-left panel reports the redistributive effects of the *FPR*. Once introduced, it generates a steep short-run reduction of inequality, with a reduction of almost 2 Gini-points in one year. This positive effect is preserved until the end of the simulation period since the GINI coefficient under the fiscal reform remains significantly below the baseline projected one. This sharp reduction in income inequality a consequence of both the introduction of more income brackets and of more progressive marginal tax rates.

From the environmental point of view the impact of the *EIB* is quite weak. The top-right panel shows that, although positive, the additional reduction of the GHG emissions promoted by the incentive to renewable investments by the *EIB* is small, leading to GHG emissions about 3% lower, as a percetage of 1990s emissions, than on the baseline and fiscal reform scenarios. The share of renewable energy source on total primary energy supply reaches the 25% in 2030 and the 35% in 2050, significantly below the national targets (with an additional investment of 300 million Euros).

From the fiscal and economic point of view, the proposed measures seem not to generate sizable effect. Indeed, both the public deficit and the real GDP growth rate follow the same path of the baseline scenario, with only marginal fluctuations, despite the significant improvement in income

distribution indicated by the GINI coefficient.

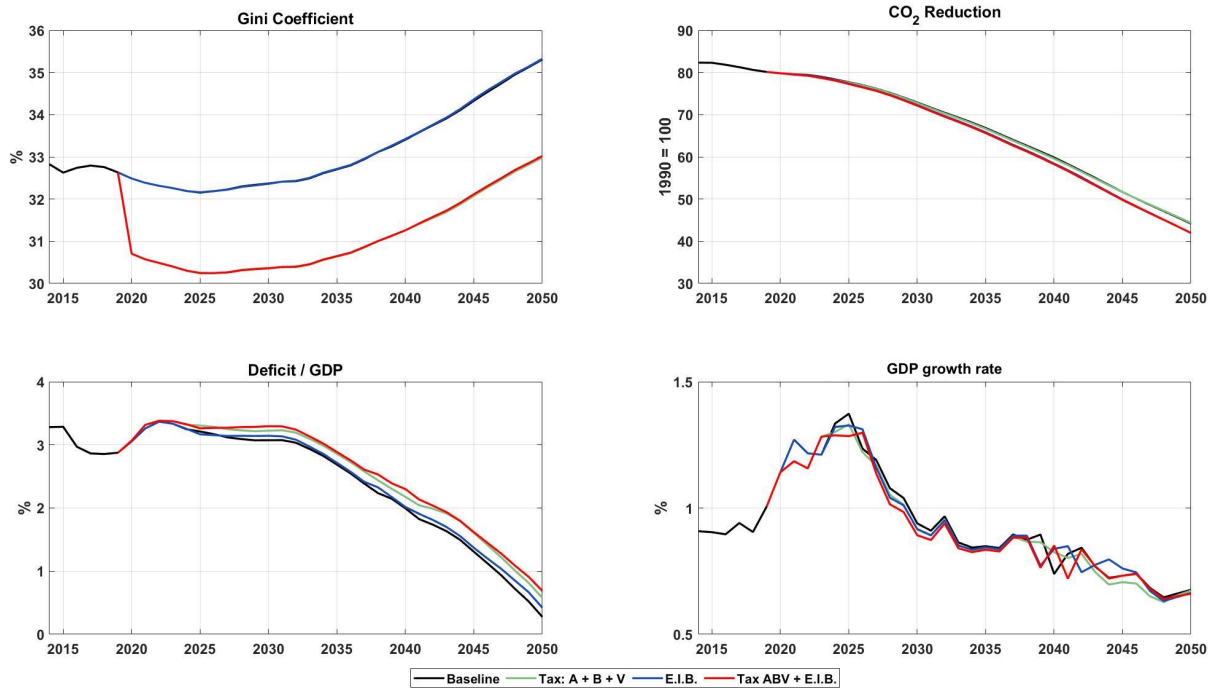

Figure 3.1: **Socio-economic and environmental impacts.** Baseline (black line) compared with the general impacts of the fiscal policy individual taxation (green line), from EIB (blue line), and their joint application (red line). The main indicators are: Gini coefficient (top-left), CO_2 reduction (top-right), Deficit to GDP ratio (bottom-left), and GDP growth rate (bottom-right). Scenarios from 2015 to 2050 in France.

In what follows we show, in greater detail, the impact of the *FPR* on the labour market and on the overall taxation. Figure 3.2 shows, for selected years, the average tax rate on wages for all the employed workers (E), divided by skill (j) and industry (i). In each period there are 30 observations (3 skills per 10 industries). Given the gross wage bill (*GWB*) by skill and industry, ordered in the horizontal axis, we observe that the main effect of the proposed *FPR* (green dots) is to increase the average tax rate paid by high income workers, compared to the Baseline.

Under the current taxation scheme (Baseline), the difference in the total share of tax paid on wages between the worst and the best paid workers is of only about 10%, between 25-35%. On other hand, the introduction of the *FPR* ensures a more progressive taxation, with a minimum average tax rate on wages of about 18%, (low skill workers in the agricultural sector) with an average yearly wage of about 20,000 Euros, up to a maximum of about 45-50%, (high skill workers in the fossil energy sector) with an average yearly wage of more than 80,000 Euros.

Figure 3.3 shows the scatter plot, for selected years, of the total pre-tax income (including capital gains and financial revenues) against the overall net tax rate (i.e., total individual taxes less total subsidies). Due to lack of available data on sectoral payment of taxes on capital gains and financial revenues, there are only 13 categories (employed, unemployed, retired and inactive low, middle and high-skill individuals and capitalists) in each period. Again, even when looking to the overall net taxes and pre-tax income, the re-distributive effect of the proposed *FPR* (green dots) still holds.

Indeed, the workers with lower income (typically low skilled and inactive) pay lower taxes under *FPR* while receiving higher subsidies. High-wage individuals earning more than 50,000 Euros per year (i.e., $10^{4.7}$, typically high skill workers and pensioners), on the other hand, pay average tax rates about 2-3% higher. The capitalists, with yearly per capita earnings of more than 1.5 million Euros per year, are the most affected category with the greatest increase in average net

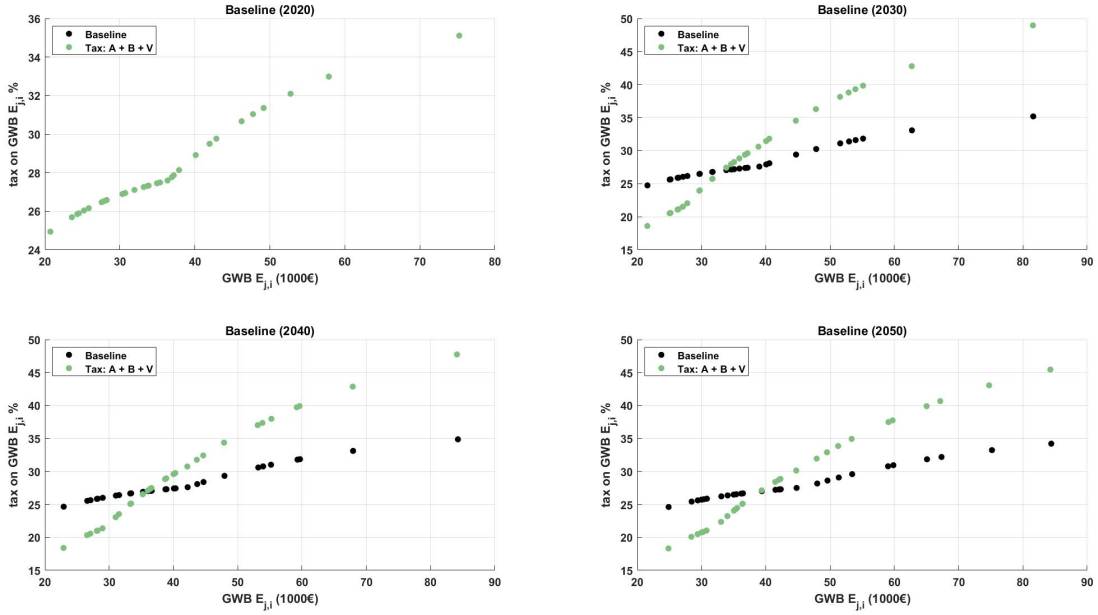

Figure 3.2: **Taxation and Labour Market.** Baseline (black dots) compared with the impact of the alternative income floors and marginal tax rates (green dots) on individual gross wage bill (*GWB*) of employed workers by skill and industry ($E_{j,i}$). Scenarios for selected years: 2020 (top-left), 2030 (top-right), 2040 (bottom left), and 2050 (bottom-right) in France.

taxes due to the additional impact of wealth taxes on top of the other fiscal policy measures.

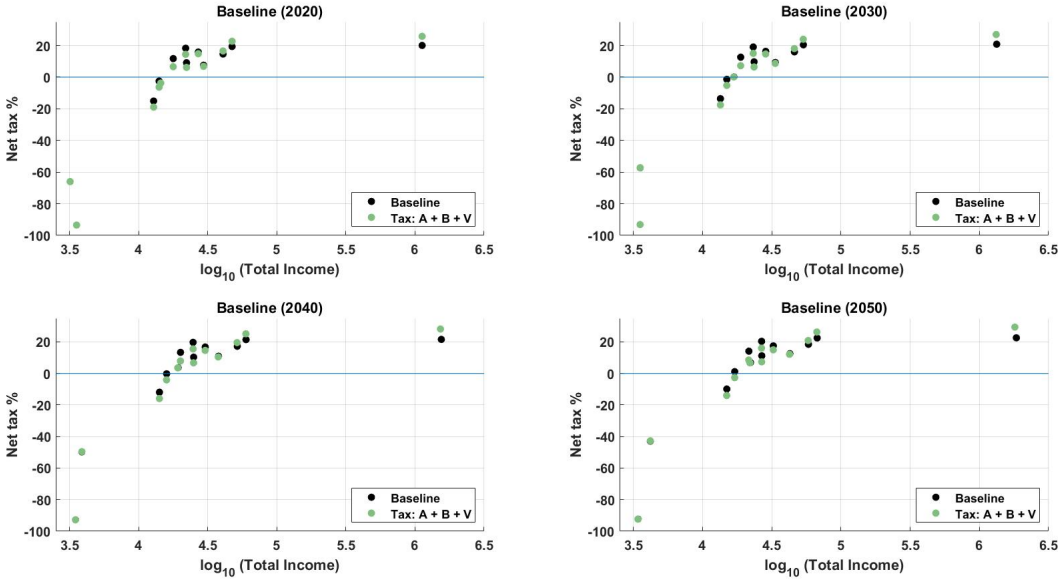

Figure 3.3: **Total individual net tax rate and total pre-tax income.** Baseline (black dots) compared with the total impact of the alternative income floors and marginal tax rates (green dots) on the overall pre-tax income, including capital gains, and income out of wealth. Scenarios for selected years: 2020 (top-left), 2030 (top-right), 2040 (bottom-left), and 2050 (bottom-right) in France.

II Policy Mix Scenarios

4. Results from PSE and GG

For the sake of completeness, we report the results from the application of the proposed *FPR* and the green financing from the *EIB* under two policy mixes presented in the original report of the EUROGREEN model: *Green Growth* (*GG*) and *Policies for Social Equity* (*PSE*) [1]. The description of the results follow the same structure of the previous Section.

Figure 4.1 compares the trends of the GG (light green lines) and PSE (light red lines), as previously presented in the main Report, with those of GG and PSE augmented by the *FPR* and the *EIB* funding (dark green and red lines, respectively). As in the previous case, the main effects are due to *FPR* which, once introduced, sharply reduces income inequality. In both *GG* and *PSE*, the introduction of *FPR* causes a downward shift of the GINI coefficient, thus reducing income inequality. However, despite the fact that tax reform is revenue-neutral in its introduction (2020) the introduction of *FPR* does increase government's deficit-to-GDP ratios on the two policy mixes. From the environmental side the effect of the EIB is still marginal, although in this setting the EU target of 80% reduction of GHG missions with respect to 1990 levels is achieved.

Under *GG* the tax reform increases the deficit-to-GDP ratio by about 0.5% by 2050, while under *PSE* as well public deficit starts to rise from the 2030s on and it ends, in 2050, around 4.5% of GDP which is more than 1% higher with respect to the original *PSE*. These trends are mostly due to the GDP dynamics whose growth under *PSE* with *FPR* declines starting in 2030s, although it converges in the long-run to the same rate of growth of *GG* (around 0.8%). This might be due to the reduction of demand generated by the *Working Time Reduction* policy, which is also reflected in lower average per capita incomes.

[1] Green Growth considers an expansion of renewable energy production and carbon taxes together with increases labour productivity and energy efficiency, whereas Policies for Social Equity adds a Job Guarantee program and Working Time reduction, from 35 to 30 hours work-weeks to the same expansion in renewable energy, carbon taxes and increased energy efficiency simulated in Green Growth

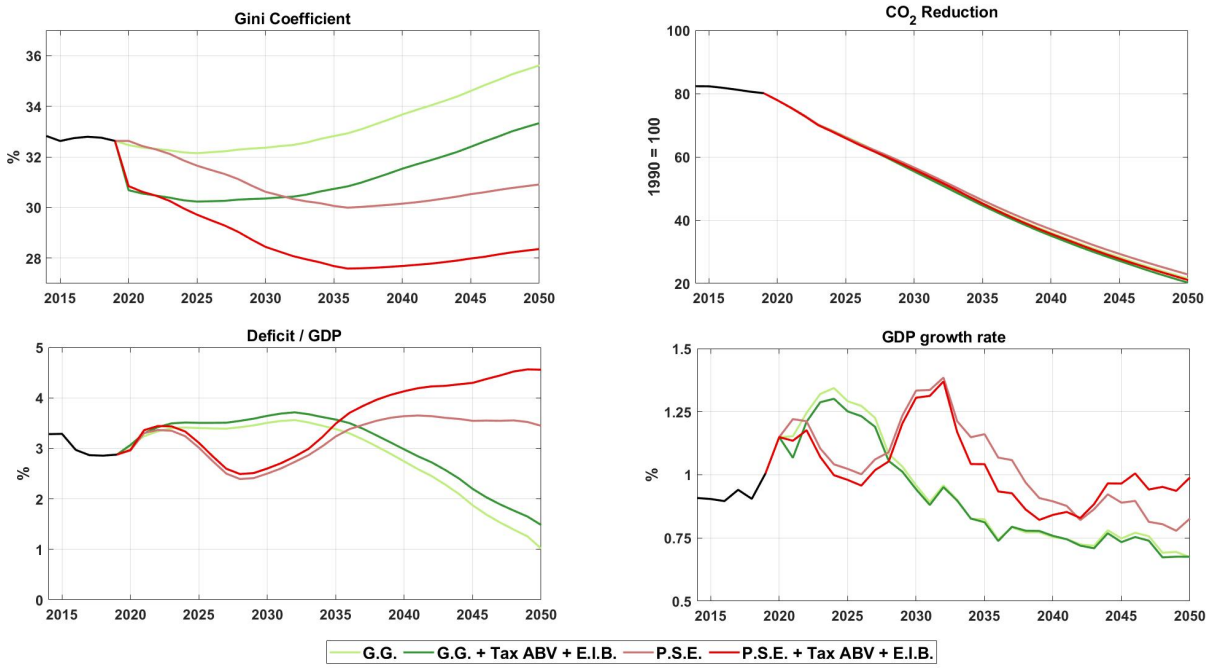

Figure 4.1: **Socio-economic and environmental impacts.** Basic GG (light green) and basic PSE (light red) compared with the general impacts of the fiscal policy individual taxation on GG (dark green) and PSE (dark red). The main indicators are: Gini coefficient (top-left), CO_2 reduction (top-right), Deficit to GDP ratio (bottom-left), and real GDP growth rate (bottom-right). Scenarios from 2015 to 2050 in France.

Figures 4.2 and 4.3 show the impacts of the proposed *FPR* on the labour market and on total income under the two policy mixes. As expected, the outcomes follow the same dynamics presented in Part I.

Figure 4.2 shows the scatter plot, for selected years, of the average tax rate on wages and the ordered gross wage bill ($GWB\ E_{j,i}$) on the *x-axis* under *GG* (green dots) and *PSE* (red dots). The redistributive impact of the proposed *FPR* is more effective when combined with the *PSE*. Indeed, the red dots are always laying above the green ones (i.e., *GG*). However, the market driven incentives of *GG* do not offset the distributive effects of the fiscal reform that significantly increases the progressiveness of the tax systems under both *GG* and *PSE*.

Figure 4.3 shows the scatter plot, for selected years, of net tax rates (i.e., total individual taxes less total subsidies) as a percentage of total pre-tax income (including capital gains and financial revenues), ordered total per capita income on teh *x-axis* under *GG* (green dots) and *PSE* (red dots). Again as in Part I, the poorest workers receive higher benefits, middle-income individuals pay less taxes on average, and higher income individuals are projected to increase their average net tax rates. This results suggest the possibility to effectively implement re-distributive fiscal policies, even when combined with other policy interventions. Moreover, as seen above, the costs of the proposed *FPR* is rather low both in terms of the public-to-GDP ratio, and is based on a rather simple principle of gradual progressive taxation of marginal incomes and a greater number of brackets for income taxation two measures that were widely adopted across developed nations in the second half of the XX^{th}.

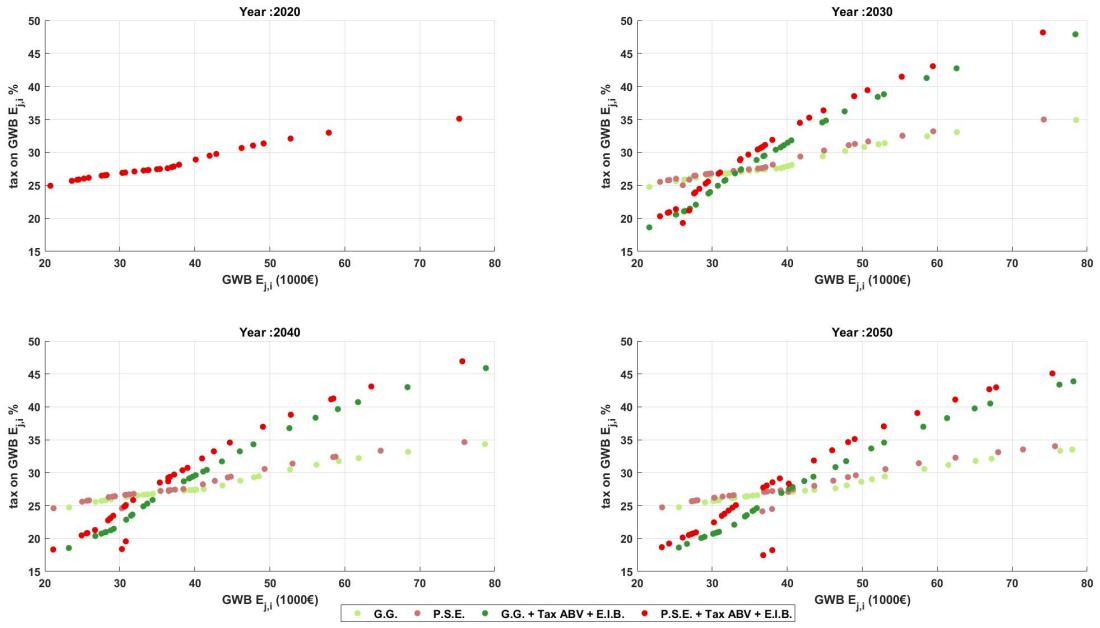

Figure 4.2: **Taxation and Labour Market.** Basic GG (light green) and basic PSE (light red) compared with the impact of the alternative income floors and marginal tax rates on individual gross wage bill (*GWB*) of employed workers by skill and industry ($E_{j,i}$) on GG (dark green) and PSE (dark red). Scenarios for selected years: 2020 (top-left), 2030 (top-right), 2040 (bottom left), and 2050 (bottom-right) in France.

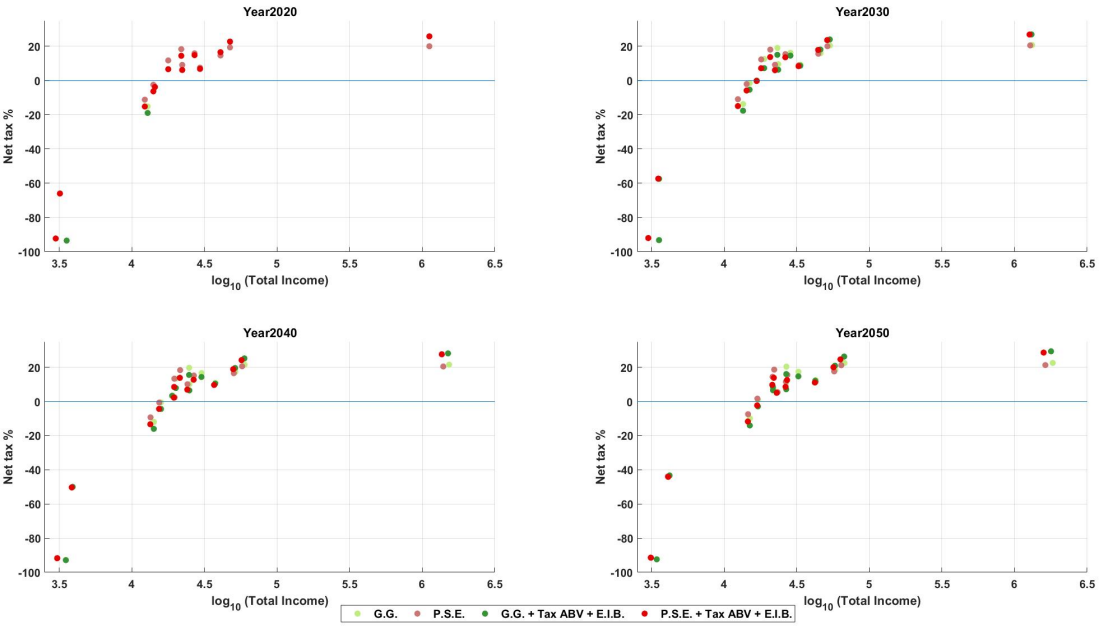

Figure 4.3: **Total individual net tax rate and total pre-tax income.** Basic GG (light green) and basic PSE (light red) compared with the total impact of the alternative income floors and marginal tax rates on the overall pre-tax income, including capital gains, and income out of wealth, on GG (dark green) and PSE (dark red). Scenarios for selected years: 2020 (top-left), 2030 (top-right), 2040 (bottom-left), and 2050 (bottom-right) in France.

5. Enhanced EIB policy

Figure 5.1 presents the results of a sensitivity analysis of the *EIB* policy. It compares the baseline scenario (blue line) to the same *EIB* funding policy presented in Part I (red line) and a stronger version of it that further boosts investment in renewable energy (green line).

Under the increased funding policy (green line) renewable energy investments increase by half (50%) when the policy is first implemented in 2020 with average yearly renewable investments of approximately 1.7 billion Euros. GHG emissions decline to about 30% of the 1990 level, i.e. the 7% below the *EIB* simple funding policy from Part I (Figure 5.1a). This reduction is due to the increased capacity of renewable energy sources (almost 80 GW in 2050) which provides more than 45,000 ktoe of renewable energy (Figure 5.1b). Panels *c* and *d* in Figure 5.1 show the paths of the two drivers of GHG emissions reduction. The first one (*c*) describes the dynamics of carbon intensity that measures the Co_2 produced per unit of energy (which declines by more than 30% in 2050 w.r.t. the 2014 level), and panel *d* plots the ratio between renewable energy sources (RES) and total primary energy supply (TPES) (which reaches the 45% of TPES in 2050).

In a nutshell, decarbonization in energy production results to be a crucial driver of GHG emissions reduction. Moreover, a slight increase in renewable investments[1] has a large impact on decarbonization at low cost for the whole economy. Indeed, the effects of the *EIB+* policy on social and economic indicators are negligible (not reported here). Moreover, even when we consider this policy together with GG and PSE policy mixes, changes are significant on GHG emissions (16% less w.r.t. the *weak* EIB policy), but negligible on the economic and social dimension.

[1] Despite the significant increase in the investments in renewable energy in the *EIB+Add.Inv* scenario, those still constitute only a small proportion of the total investments of the economy.

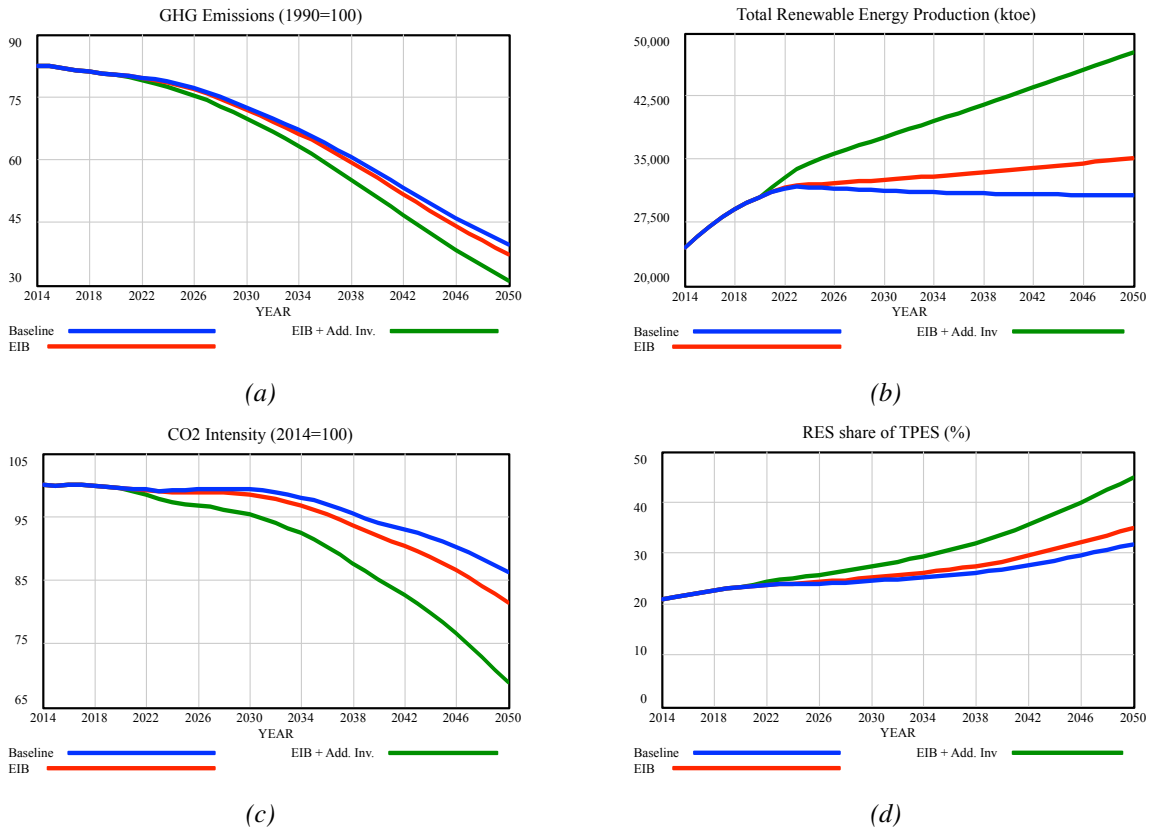

Figure 5.1: ***EIB policy's impact on energy indicators.*** *Baseline (blue), EIB (red), EIB + Additional Investment (green).*

References

Alvaredo, Facundo, e. a. (2017). Global inequality dynamics: New findings from wid. world. *American Economic Review 107*(5), 404–409.

Atkinson, A. B., T. Piketty, and E. Saez (2011). Top incomes in the long run of history. *Journal of Economic Literature 49*(1), 3–71.

Garbinti, B., J. Goupille-Lebret, and T. Piketty (2018). Income inequality in france, 1900–2014: Evidence from distributional national accounts (dina). *Journal of Public Economics 162*, 63–77.

Ghisetti, C., S. Mancinelli, M. Mazzanti, and M. Zoli (2017). Financial barriers and environmental innovations: evidence from eu manufacturing firms. *Climate Policy 17*(sup1), S131–S147.

IRENA (2018). Renewable Energy Statistics 2018. Technical report, Abu Dhabi.

Piketty, T. and G. Zucman (2014). Capital is back: Wealth-income ratios in rich countries 1700–2010. *The Quarterly Journal of Economics 129*(3), 1255–1310.