The Gender Equality Reserve (GER): Fiscal Incentives for Gender-Inclusive Capital Formation

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Abstract

This paper develops a theoretical framework for addressing underinvestment in gender-inclusive leadership through corporate tax policy. Drawing on optimal taxation theory, I introduce the *Gender Equality Reserve* (GER) – a fiscal instrument that allows firms to deduct pre-tax investments in gender-focused organizational capital. A stylized neoclassical model demonstrates how informational frictions and externalities result in inefficiently low levels of inclusive governance. By reducing the effective cost of such investments, the GER partially internalizes their social returns and shifts firm behavior toward the social optimum. The mechanism provides both normative and efficiency-based justifications for policy design and is especially relevant for sectors undergoing institutional transformation, such as energy and technology. This analysis contributes to the literature on tax design and inclusive growth, and supports broader Sustainable Development Goals related to gender equality (SDG 5) and decent work (SDG 8).

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1 Introduction

Efficient capital formation is central to economic growth (Barro, 1991; Mankiw et al., 1992; Solow, 1956). Yet, a persistent inefficiency undermines this process: the systematic underinvestment in gender-inclusive leadership and organizational capital. This persists despite growing evidence linking gender diversity to improved decision-making, innovation, and firm performance (Adams and Ferreira, 2009; Ø stergaard et al., 2011; Post and Byron, 2015). Women remain structurally underrepresented in executive and boardroom roles, even in developed economies (Duflo, 2012).

Sweden – often cited as a leader in gender equality – illustrates this disconnect. Despite generous parental leave, universal childcare, and public board quotas, women hold only 10% of CEO positions in publicly listed firms as of 2024 (AllBright Foundation, 2024). This gap between institutional reforms and actual outcomes signals deeper market failures, including informational frictions, implicit bias, and uninternalized externalities.

While much research explores firm-level effects of gender diversity, little attention has been given to how public policy – particularly fiscal tools – can shape incentives for inclusive organizational behavior. Unlike mandates or disclosure rules, few market-compatible, theoretically grounded mechanisms exist to internalize the broader social returns of gender-inclusive leadership.

This paper addresses that gap by proposing a novel fiscal instrument – the *Gender Equality Reserve (GER)* – to encourage voluntary corporate investment in gender-focused human capital. Rooted in optimal taxation theory, the GER allows firms to allocate pre-tax profits to initiatives that promote inclusive leadership – such as mentorship, training, and recruitment. These allocations would be treated analogously to existing reserves for income smoothing or environmental investment, making them tax-deductible and financially attractive.

A stylized neoclassical model formalizes the mechanism. Firms choose optimal levels of capital and gender-equality investment under alternative tax regimes. Informational frictions and externalities generate suboptimal investment in inclusive leadership; by lowering the effective cost of such investment, the GER partially internalizes social returns and aligns private incentives with the social optimum.

The analysis identifies conditions under which the GER enhances both efficiency and equity without distorting firm-level productivity choices. Unlike mandatory interventions, the GER preserves voluntary uptake and leverages existing incentives. It is particularly relevant in sectors undergoing institutional transformation – such as energy, technology, and defense – where leadership diversity may support resilience and innovation.

Beyond theoretical appeal, the GER offers financial benefits. By converting gender-equality spending into pre-tax allocations, the policy reduces a firm's taxable base and effective tax rate. In high-tax jurisdictions, this yields meaningful marginal savings – especially for firms already engaged in informal human capital development.

The GER is also empirically tractable. By incorporating thresholds, matching rates, or sunset clauses, the design lends itself to rigorous evaluation via quasi-experimental methods such as regression discontinuity or difference-in-differences. It thus offers both a policy tool and an opportunity to strengthen the empirical foundation for gender-responsive fiscal policy.

This paper contributes to three strands of literature. First, it advances the theory of tax design by introducing a new category of organizational capital – gender-inclusive leadership – as an economically productive but under-incentivized input. Second, it provides a formal rationale for using tax instruments, rather than mandates, to address persistent inclusion failures – an approach largely absent in the economics of diversity. Third, it bridges corporate finance and social policy by demonstrating how fiscal tools can correct misaligned incentives without distorting firm-level productivity decisions.

By reclassifying gender-inclusive leadership development as a capital investment, the GER offers a novel mechanism for fiscal intervention that is incentive-compatible, cost-efficient, and policy-relevant. Unlike previous proposals that rely on regulatory enforcement or soft CSR, this framework embeds inclusion into the firm's optimization calculus. In doing so, it reframes gender equity not as a compliance burden or reputational asset, but as a strategic input into value creation.

The remainder of this paper is structured as follows: Section 2 reviews the literature. Section 3 outlines the Swedish context. Section 4 presents the theoretical model. Section 5 discusses empirical implementation. Section 6 explores design considerations. Section 7 reflects on broader implications.

2 Previous Literature

The relationship between tax policy and corporate investment behavior has been extensively studied, with foundational work by Jorgenson (1963) and Hall and Jorgenson (1967) showing that reductions in the cost of capital – driven by tax incentives – can stimulate firm-level investment and productivity. This insight has been extended by more recent research emphasizing firm heterogeneity: responses to tax policy depend on firm size, liquidity, and financial constraints (Cummins et al., 1996; Hassett and Hubbard, 2002; Zwick and Mahon, 2017). Tax incentives have also been shown to function as counter-cyclical stabilizers during recessions, supporting investment in periods of economic contraction (Goolsbee, 1998; House and Shapiro, 2008).

Parallel to this, a growing body of work explores the use of targeted fiscal instruments to steer firm behavior toward socially desirable outcomes. For example, environmental taxes and green investment subsidies have been used to incentivize innovation in clean technologies (Goulder and Parry, 2013; Metcalf, 2019). The emergence of ESG finance reinforces the notion that fiscal policy can be an effective tool for aligning private capital with public policy objectives (Eccles and Serafeim, 2014; Flammer, 2021).

Despite these advances, few studies have explored the role of tax policy in promoting gender-inclusive organizational behavior. Research on the gendered effects of taxation – primarily at the household or individual level – shows that tax structures often exacerbate structural inequalities. For example, studies by World Bank Group (2011) and Hodgson and Sadiq (2016) demonstrate that women are underrepresented among business owners and shareholders, meaning they benefit less from reductions in corporate tax rates. Similar critiques apply to tax expenditures targeting specific business activities, such as R&D or SME support, where women-owned firms – typically smaller and less capitalized – are less likely to qualify (Mourre, 2014).

Moreover, international tax competition and profit shifting exacerbate distributional inequalities. As governments reduce corporate tax rates to attract capital, they often shift the tax burden toward labor and consumption—bases where women are overrepresented both as earners and consumers (Organisation for Economic Co-operation and Development, 2015). These dynamics illustrate how ostensibly neutral corporate tax policy can reinforce existing gender disparities.

Optimal taxation theory provides a framework for addressing such inefficiencies. Seminal contributions by Ramsey (1927) and Mirrlees (1971) posits that efficient tax systems should account for behavioral elasticities to minimize distortions. Applied to labor markets, this logic has shown that women's labor supply is more elastic than men's, suggesting that gender-informed tax policy can enhance both equity and efficiency (Blundell and MaCurdy, 1999; Eissa and Hoynes, 2004; Kleven et al., 2009). However, this insight has rarely been extended to the firm level, where corporate decision-making around inclusion may also respond to fiscal incentives.

To date, no comprehensive framework exists for integrating gender equity into corporate tax systems. One notable exception is the analysis by the UK Women's Budget Group, which examines how corporate tax cuts disproportionately benefit men due to their overrepresentation among capital owners (World Bank Group, 2011). Yet the literature remains fragmented, with limited exploration of how fiscal tools might be used to actively promote inclusive organizational investments.

Taken together, the literature reveals a growing awareness of gendered effects in taxation, but an absence of concrete, theoretically grounded tools for integrating gender equity into corporate fiscal policy. Existing work largely focuses on individual-level taxation or broad distributional outcomes, leaving organizational behavior and capital formation unaddressed. This gap is particularly striking given the documented responsiveness of firms to tax incentives in other domains. These omissions underscore the need for frameworks that treat gender-inclusive leadership not as a social externality alone, but as a legitimate target for fiscal innovation.

3 Swedish Corporate Taxation and the Case for a Gender Equality Reserve

Sweden's corporate tax system has evolved through a series of reforms aimed at enhancing investment efficiency, promoting macroeconomic stability, and preserving fiscal neutrality. A defining feature of this system has been the strategic use of tax-deferred reserves, allowing firms to shift income across time to support long-term planning and counter-cyclical behavior.

Historically, the Investment Fund system (1950s–1990s) allowed firms to allocate pre-tax profits into internal reserves, which could be used during downturns or reinvested later. These reserves served not only as liquidity buffers but also as tools for industrial policy, linking tax deferral to strategic capital formation. This approach was gradually replaced in the 1990s by more flexible profit-smoothing instruments, such as the tax equalization reserve and, later, the tax allocation reserve (periodiseringsfond).

The periodiseringsfond, introduced in 1994, permits firms to defer taxation on up to 25% of annual profits for up to six years. This mechanism remains central to Swedish corporate taxation and provides intertemporal flexibility in managing tax liabilities. It has been particularly relevant in capital-intensive sectors, where investment planning must navigate cyclical income streams and financing constraints. While an imputed interest charge was later introduced to reduce the scope for pure tax arbitrage, the underlying principle—that reserves can be used to guide firm behavior—remains firmly embedded in Sweden's tax architecture.

Against this backdrop, I propose the GER as a natural extension of Sweden's fiscal toolkit – one that reorients traditional tax-deferral logic toward a socially strategic objective: gender equity in corporate leadership. Like earlier reserve instruments, the GER would allow firms to set aside pre-tax profits, but with a clear earmark: the funds must be invested in activities that promote gender inclusion, such as leadership training for women, inclusive recruitment strategies, mentorship programs, and family-supportive workplace reforms.

These contributions would be tax-deductible or tax-deferred, conditional on their purpose and compliance with reporting standards. By reducing the marginal cost of such investments, the GER creates fiscal space for equity-enhancing expenditures that are otherwise easily deprioritized in short-term budgeting processes. In doing so, it internalizes the broader social returns to gender diversity and embeds them within firm-level financial calculus.

Unlike general-purpose reserves, GER is outcome-linked and policy-driven. It blends administrative familiarity (firms already manage reserve accounts) with strategic reorientation, shifting reserves from passive income-smoothing toward proactive human capital development. Much like green tax incentives that realign investment toward environmental goals, GER integrates social sustainability into the logic of corporate finance.

In sum, the GER represents a modern update of Sweden's longstanding reserve instruments. It reflects a broader evolution in fiscal thinking –from neutral tax treatment toward incentive-aligned policy design – and opens a path for embedding inclusion objectives within tools of corporate taxation. Rather than functioning as general profit-smoothing devices, GER reserves are purpose-specific and performance-linked. Firms could be required to report on gender outcomes tied to these investments, ensuring accountability and measurable progress.

4 Theoretical Framework: The Creation of a Gender Equality Reserve (GER)

4.1 Investment Incentives of Tax Allocation Reserves as a inspiration

This section outlines the theoretical model used to assess the investment incentives provided by tax allocation reserves, incorporating traditional neoclassical investment theory Södersten (1989), Auerbach et al. (1995), and the extension by Kari (2017), which adds tax allocation reserves to the analytical framework. The goal is to explore whether tax allocation reserves optimize investment behavior and reduce the cost of capital.

The standard neoclassical model assumes a firm that maximizes value by allocating profits to dividends, investment, and taxes. The production function exhibits diminishing returns to capital, and the capital stock evolves according to investment and depreciation. A tax allocation reserve, constrained by a share of profit after depreciation, is introduced, and the reserve accumulates over time. A portion of the reserve is subject to taxation, and firms are assumed to defer tax payments as long as possible, as it is financially advantageous.

The firm's tax payments are calculated as a percentage of taxable income, which is the operating profit minus fiscal depreciation and contributions to the reserve:

$$T \equiv \tau \left[\pi(K) - ak - (C - bR) \right]$$

where τ is the corporate tax rate, $\pi(K)$ is the profit, ak is the fiscal depreciation, and C is the contribution to the reserve, while bR represents the amount of the reserve that is taxable.

The reserve evolves according to the following equation:

$$\dot{R} = C - G - bR$$

where G is the use of the reserve for investment, and b is the decay rate of the reserve. The accounting stock of capital evolves similarly:

$$\dot{k} = I - ak$$

where I is the investment, and ak is the fiscal depreciation. The firm allocates profits between dividends, investment, and taxes, subject to the constraints outlined in the model.

The firm's optimization problem is framed as:

$$Max \qquad V(0) = \int_0^\infty Div\, e^{-\rho t}\, dt$$

where Div is the dividends paid to the owners, and ρ is the discount rate. The firm maximizes the present value of its cash flows subject to the constraints on capital, reserves, and taxes.

The inclusion of tax allocation reserves and non-binding dividend constraints leads to a change in the cost of capital. The first-order condition for capital allocation becomes:

$$\pi'(K) = \frac{1 - e_{TAR}A}{1 - e_{TAR}}(\rho + \delta)$$

where e_{TAR} is the effective corporate tax rate:

$$e_{TAR} = (1 - f)\tau + fB\tau$$

Here, A is the present value of fiscal depreciation allowances, and B is the present value of deferred tax payments. The term e_{TAR} represents a weighted average of directly paid taxes and deferred taxes from the reserve. Since e_{TAR} is less than the statutory tax rate τ, the cost of capital is reduced as a result of the use of the reserve. Specifically:

$$e_{TAR} = \tau - f\tau(1 - B)$$

Since $e_{TAR} < \tau$, the cost of capital becomes lower than in the standard case where no tax allocation reserves are used. This reduction in the cost of capital provides a strong incentive for firms to use tax allocation reserves as a strategic tool for investment.

In conclusion, the model demonstrates that the use of tax allocation reserves lowers the effective tax rate on capital, thus reducing the cost of capital and providing firms with an incentive to defer taxes and invest more efficiently. Further details of the model, including the full set of equations and assumptions, can be found in *Appendix A*.

4.2 Model Setup

I consider a firm that at the beginning of a period decides how to allocate resources between two types of capital investments:

1. **Standard capital investment**, denoted K, which represents conventional projects or assets aimed at profit maximization (for example new machinery, general human capital training, etc.).
2. **Gender-inclusive investment**, denoted G, which represents expenditures specifically directed toward enhancing gender equality and female inclusion in the firm's productive capacity (for example targeted recruitment or training programs for women, workplace facilities to support female employees, or investment in female-led projects).

Investment G is the focus of the policy intervention. The firm's pre-tax output in the next period is given by a production function:

$$Y = F(K, G; \Theta),$$

where Θ represents other factors (such as labor inputs, technology level, and parameters capturing productivity). I assume $F(\cdot)$ is an increasing, concave function in each of its arguments, exhibiting diminishing marginal returns to both K and G. This ensures an interior solution for investment choices under appropriate conditions and simplifies the comparative static analysis. For analytical tractability, one might specify a form such as $F(K, G) = A \cdot [f(K) + \phi\, g(G)]$, where f and g are concave, increasing functions and ϕ captures the relative productivity or effectiveness of G in contributing to output. A key premise is that, absent any intervention, ϕ might be perceived as low or the benefits of G are partially external to the firm (for example, improving gender balance yields broader social gains beyond the firm's private returns). This could lead firms to underinvest in G under pure profit maximization.

In a no-policy baseline, the firm faces a corporate profit tax at rate t on its earnings. It chooses K and G to maximize after-tax profit:

$$\Pi_{\text{no policy}} = (1 - t)\big[F(K, G) - C(K) - C(G)\big], \tag{1}$$

where $C(K)$ and $C(G)$ represent the cost of investing in K and G, respectively. For simplicity, assume a per-unit cost of investment of 1 (we can interpret K and G in monetary units), so $C(K) = K$ and $C(G) = G$; later we can allow for more complex cost functions (for example, convex adjustment costs) without loss of generality. The first-order conditions (FOCs) for an interior optimum (K^*, G^*) in the no-policy case equate marginal after-tax returns to marginal costs:

$$(1 - t)F_K(K^*, G^*) = 1, \tag{2}$$

$$(1 - t)F_G(K^*, G^*) = 1, \tag{3}$$

where F_K and F_G denote partial derivatives of F with respect to K and G. Equation (3) implies that, at optimum, the firm will invest in G up to the point where the marginal private return equals the cost. If F_G is relatively small or if initially $G = 0$ yields $F_G > 1/(1-t)$ but G has fixed setup costs, the solution could be a corner with $G^* = 0$. In other words, without policy, the firm might choose not to invest in gender-inclusive capital at all if the immediate marginal gains are not commensurate with the costs.

Now we introduce the **Gender Equality Reserve (GER)** policy. Under the GER, the firm is permitted to allocate a certain fraction of its profit (or investment) to a reserve associated with gender-inclusive projects, which receives favorable tax treatment. There are multiple ways to formalize this; I adopt a simplified representation capturing the essential incentive: suppose the government effectively subsidizes or exempts from tax a fraction $\sigma \in [0, 1]$ of the investment in G. This can be interpreted as a tax deduction or deferral: for each dollar invested in G, the firm can deduct σ dollars from its taxable income (or equivalently, save paying tax t on that σ portion). In practice, a policy such as GER might allow a firm to set aside an amount up to some cap as a reserve for qualifying projects, deferring taxation on that amount. For the model, the precise implementation can be thought of as a subsidy on G equal to $t\sigma$ per dollar (if fully deductible) or simply a reduction in the effective price of G. Thus, under GER, the firm's after-tax profit can be

written as:

$$\Pi_{\text{GER}} = (1-t)\big[F(K, G) - K - G\big] + t \cdot \sigma G. \tag{4}$$

The last term $t\sigma G$ represents the tax saving due to the reserve: the firm saves t on each dollar of G for a fraction σ of those dollars.[1] In effect, the firm faces an effective cost of $(1-\sigma)$ for each unit of G (before tax, then multiplied by $(1-t)$ after tax on profits). The FOCs under the GER policy become:

$$(1-t)F_K(K, G) = 1, \tag{5}$$
$$(1-t)F_G(K, G) = 1 - t\sigma. \tag{6}$$

Equation (5) remains unchanged for K since the incentive is targeted only at G. Equation (6) demonstrates that the marginal condition for G is relaxed: the firm will invest in G until the marginal return F_G equals $\frac{1-t\sigma}{1-t}$, which is lower than 1 when $\sigma > 0$ (since typically $t \in (0, 1)$). In other words, the hurdle rate for investment G is reduced by the tax incentive. If σ is large enough, even projects with relatively modest private return can become attractive, bridging the gap between private and social returns if, for example, G has broader benefits.

In order to ensure an interior solution, I assume that σ is not so high as to drive the

[1] If the policy is a full tax deferral on amount G (up to a limit), then effectively σ might be 1 for the portion within the limit, but that money is taxed later when the reserve is released. In present-value terms, a deferral for d years would correspond to a subsidy $t(1-\delta^d)$ where δ is a discount factor. I abstract from multi-period details by treating σ as the net effective subsidy rate for simplicity.

right-hand side of (6) to zero or negative (practically, σ would be bounded by policy design, for example, a firm cannot deduct more than it invests: $\sigma \leq 1$). For analytical purposes, one can treat $\sigma t < 1$ so that $1 - t\sigma > 0$. I also assume that $F_G(K,0) > \frac{1-t\sigma}{1-t}$ so that some positive G is optimal under the policy (if the starting marginal return at $G = 0$ is still below the threshold, then even with incentive the firm wouldn't invest, but this would be a degenerate case or indicate σ too low to matter).

4.3 Analysis of Firm Behavior Under GER

In order to highlight the impact of the GER incentive, I analyze the firm's optimal choice of G in the no-policy vs. policy scenarios. Let $G^*(\sigma)$ denote the optimal level of gender-inclusive investment when the subsidy rate is σ (with $G^*(0)$ corresponding to the no-policy case). First note a basic property of the solution:

Lemma 1 (Monotonicity of $G^*(\sigma)$) *The firm's optimal gender-inclusive investment $G^*(\sigma)$ is non-decreasing in the subsidy rate σ. Moreover, for $\sigma > 0$ sufficiently small, $G^*(\sigma) > G^*(0)$, provided the firm was at a corner solution $G^*(0) = 0$ in the absence of the GER.*

[Proof (Sketch)] See Appendix B for the full derivation. Intuitively, $\frac{\partial \Pi_{\mathrm{GER}}}{\partial G} = (1 - t)F_G(K,G) - (1 - t\sigma)$ from (4). The second derivative $\frac{\partial^2 \Pi_{\mathrm{GER}}}{\partial G^2} = (1 - t)F_{GG}(K,G)$ is negative due to the concavity of F, ensuring a unique optimum. By the Implicit Function Theorem applied to the FOC (6), $dG^*/d\sigma$ has the same sign as $t(1 - t)F_{GG}^{-1}$, which is positive since $F_{GG} < 0$. Thus $G^*(\sigma)$ increases with σ. If $G^*(0) = 0$ (corner solution), then for a small $\sigma > 0$, the incentive tilts the firm's payoff towards a positive G (because initially $F_G(K,0)$ was just below $1/(1 - t)$, any subsidy makes $1 - t\sigma < 1$ so $F_G(K,G)$ at $G = 0$ now exceeds the required return, implying a switch to an interior optimum $G > 0$).

Lemma 1 establishes that introducing or increasing the GER subsidy cannot reduce the firm's chosen investment in gender-inclusive capital, and it will strictly increase it if the firm was previously not investing at all (or at a lower interior solution). This leads to our first main proposition regarding the existence of a threshold subsidy that induces participation in gender-inclusive investment:

Proposition 1 (Threshold Effect of the Incentive) *There exists a critical subsidy level $\sigma^\dagger \in [0,1]$ such that:*

- *For $\sigma < \sigma^\dagger$, the firm chooses $G^*(\sigma) = 0$ (corner solution: no gender-inclusive investment).*
- *For $\sigma \geq \sigma^\dagger$, the firm chooses $G^*(\sigma) > 0$ (interior solution with positive gender-inclusive investment).*

Furthermore, at $\sigma = \sigma^\dagger$, the firm is indifferent between $G = 0$ and a marginally positive G, that is $F_G(K,0) = \frac{1-t\sigma^\dagger}{1-t}$ when evaluated at the optimal K.

[Proof Outline] The proposition follows from the properties of the firm's first-order condition in G. In absence of the policy ($\sigma = 0$), suppose the optimum is a corner with $G^* = 0$. This implies $(1-t)F_G(K^*, 0) < 1$ (marginal return of G is below cost at zero). As σ increases, the effective marginal cost of G decreases (RHS of (6) declines). Define $\Delta(\sigma) := (1-t)F_G(K^*(\sigma), G^*(\sigma)) - (1-t\sigma)$. At $\sigma = 0$, $\Delta(0) < 0$ (since $G^*(0) = 0$ yields $(1-t)F_G < 1$). In the limit $\sigma \to 1$, the condition $1 - t\sigma \to 1 - t(1) = 1 - t$, so the firm would choose G such that $(1-t)F_G = 1 - t$ (which for concave F will require a positive G in general because $F_G(K, 0)$ is finite and $1 - t$ is smaller than 1). By continuity of F_G and the implicit function, there must exist $\sigma^\dagger$ where $\Delta(\sigma^\dagger) = 0$. For σ beyond that point, the FOC can be satisfied with $G > 0$. Details are provided in Appendix B.

Proposition 1 formalizes the intuitive threshold effect: a sufficiently generous tax incentive is required to induce firms that initially do not invest in gender-inclusion to start doing so. In policy terms, this result highlights that small tax breaks might be ineffectual if they do not fully offset the perceived gap between private and social returns of such investments. Once the threshold is crossed, additional increases in σ will further increase G^* (per Lemma 1), although with diminishing returns due to concavity. I now consider how the introduction of the GER affects other firm choices and outcomes. One immediate question is whether the incentive distorts the allocation to standard capital K. Equation (5) demonstrates that the condition for K is unaffected by σ; however, if the production function has complementarities or substitutability between K and G, the optimal K might adjust when G changes.

For example, if K and G are complements (for example, investing in women's training (higher G) makes physical capital more productive), then an increase in G could raise the marginal productivity of K and lead the firm to also raise K^*. Conversely, if the firm has a fixed budget or faces financing frictions, increased spending on G might crowd out some K.

In order to fix ideas, one could extend the model to include a financing constraint or cost of capital to analyze this interplay. In our baseline model without financing constraints, and assuming separability in $F(K, G) = f(K) + \phi g(G)$, there is no direct interaction in first-order conditions aside from the budget allocation. In that separable case, K^* is unchanged by σ (since F_K does not depend on G). In a more general case, one could derive $\partial K^*/\partial\sigma$ by totally differentiating both FOCs; the sign would depend on F_{KG}.

Despite these nuances, the primary effect of the GER is to boost G. The consequent outcomes of interest include:

Female employment or participation (L_f): If G corresponds to investments facilitating female employment (training, recruitment, etc.), an increase in G should translate into higher female labor usage. Many models would treat L_f as increasing in G (either directly, or via a function $L_f = h(G)$ that could be part of Θ in F). Thus, the GER can reduce gender gaps in the workforce at the firm level.

Output and profits: The impact on output Y is positive since F increases in both inputs. The impact on after-tax profit for the firm is also non-negative by design, since the firm would not utilize the GER if it didn't at least leave them no worse off than without it. In fact, the GER is effectively giving a tax break, so ceteris paribus it raises the firm's after-tax profit (though the firm may spend more on G than before).

Government revenue: A crucial aspect from a policy perspective is the fiscal cost. In the short run, the government loses tax revenue on the σG portion. However, if the investments lead to higher productivity and thus higher future taxable income (or if they correct a market failure), there could be dynamic feedback that partially offsets the cost. I do not model dynamic feedbacks explicitly in this one-period model, but I discuss welfare in a comparative static sense below.

Finally, I address the social perspective. Suppose G yields an external benefit not captured in $F(K, G)$. For example, a more gender-diverse workforce could generate societal gains or knowledge spillovers. Let the social welfare be $W = (1-t)[F(K,G)-K-G]+t\sigma G+B(G)$, where $B(G)$ is an increasing function capturing external benefit (with $B'(0) > 0$ perhaps). The government's objective might be to maximize W by choice of σ. Standard analysis would set σ such that at the firm's optimum $G^*(\sigma)$, the marginal social benefit equals marginal social cost. This yields $B'(G) = t\sigma^* - t\sigma^* G \cdot (\partial\sigma/\partial G)$ at optimum or roughly $B'(G^*) = t\sigma^*$ in a simple case, implying the optimal subsidy equates to the marginal external benefit at the chosen G^*. The framework can thus rationalize the GER as a Pigouvian incentive to internalize positive externalities of gender-inclusive practices. In the absence of an externality ($B'(G) = 0$), a social planner concerned only with efficiency would have no reason to subsidize G beyond distributional or equity motives.

Proposition 2 (Welfare and Optimal Policy) *If gender-inclusive capital G generates a social benefit $B(G)$ beyond the firm's private returns, then a properly calibrated GER can achieve the first-best allocation. In particular, there exists a subsidy rate σ^* such that the level of G chosen by profit-maximizing firms under the GER ($G^*(\sigma^*)$) maximizes social welfare W. This σ^* effectively internalizes the external benefit $B'(G)$ at the margin. If no external benefits exist ($B'(G) \equiv 0$), then $\sigma^* = 0$ (that is, the first-best involves no distortionary incentive, assuming no distributional preferences).*

[Proof Sketch] Maximizing social welfare W with respect to σ (taking the firm's response $G^*(\sigma)$ into account) leads to a condition equivalent to $(1-t)F_G(K^*, G^*) + B'(G^*) = 1$ at optimum (where K^*, G^* are chosen by firm given σ). Using the firm's FOC under GER, $(1-t)F_G = 1-t\sigma$, the condition becomes $1-t\sigma^* + B'(G^*) = 1$. Thus $t\sigma^* = B'(G^*)$. Hence the optimal subsidy equals the marginal external benefit at the optimum. Setting σ to this level yields the first-best G because the firm then equates $(1-t)F_G$ to $1-t\sigma^* = 1-B'(G^*)$, which means $(1-t)F_G + B'(G) = 1$ at the chosen G, satisfying the Samuelson condition for optimal provision (marginal social benefit equals marginal cost). Details are in Appendix B.

Proposition 2 underscores the normative rationale for the GER: if investing in gender equality has societal returns (for example, reducing future gender gaps, improving aggregate productivity by better talent allocation), a subsidy can correct the underinvestment by firms acting on private incentives alone. In practice, calibrating σ to the exact optimal level requires knowledge of $B'(G)$ and firms' F_G.

Having laid out the theoretical underpinnings of the GER, I proceed to empirically how to evaluate the impact of such a policy. The next section describes the context in which a GER-style policy was implemented and our strategy to estimate its causal effects.

5 Empirical Implementation Strategies

If a GER policy is implemented, it is crucial to rigorously evaluate its impact. Causal identification of GER's effects on firms and workers can be challenging because simply observing changes after the policy could conflate the policy effect with other trends. I outline three empirical strategies that researchers (or a government evaluation unit) could use to obtain credible estimates of the policy's impact: regression discontinuity, instrumental variables, and difference-in-differences. Each approach relies on specific features of policy implementation or external variation.

5.1 Regression Discontinuity Design (RDD)

A regression discontinuity design (RDD) exploits a situation where eligibility for GER or the intensity of GER treatment changes abruptly at a known threshold. Policymakers might, for administrative or budgetary reasons, restrict GER to certain firms. For example, one design could be: firms with annual revenues below $X million can allocate to the GER (getting the subsidy), whereas larger firms cannot (or face a lower subsidy rate). Alternatively, the subsidy rate θ might step down after a certain firm size or profit level, or only firms above a certain number of female employees might qualify for additional incentives. Any such rule creates a discontinuity in treatment at the cutoff.

Under a RDD, one would compare firms just below the threshold to those just above it. If the threshold is strictly enforced and firms cannot precisely manipulate their status (aside from normal business fluctuations), those firms near either side are arguably similar in all respects except the treatment (GER availability). Thus, a jump in outcomes at that threshold can be attributed to the policy.

For instance, suppose the rule is that firms with fewer than 250 employees can claim GER benefits, while those with 250 or more cannot. Researchers can collect data on firms with, say, 100 to 400 employees and examine whether there is a discontinuous change in outcomes (such as female training expenditures, female promotion rates, or productivity) at the 250-employee mark. The analysis would involve running a regression:

$$Y_i = \alpha + \beta \cdot \mathbf{1}\{\text{Employees}_i \geq 250\} + f(\text{Employees}_i) + \epsilon_i,$$

where Y_i is an outcome for firm i (post-policy), $\mathbf{1}\{\cdot\}$ is an indicator for being above the threshold (and thus ineligible or facing a different rate), and $f(\cdot)$ is a smooth function (like a polynomial) of firm size to capture baseline trends. A significant β would indicate a causal effect of losing access to GER (or the change in rate) on the outcome. One would expect, for example, a negative jump in female training investment at the threshold if GER provides a benefit below it. If combined with pre-policy data, a "fuzzy" RDD could also be implemented if compliance with the threshold rule is imperfect or if it was phased in.

The RDD approach requires careful validation of the usual assumptions: no other policy or discrete change at the same threshold, and firms just around the cutoff are otherwise comparable. Researchers should check for "sorting" around the cutoff (to ensure firms didn't deliberately reduce size to qualify—if they did, that in itself may indicate the policy's value, but it complicates identification). Provided these conditions hold, RDD offers a credible local estimate of the policy's impact on those firms near the margin.

5.2 Instrumental Variables (IV)

Instrumental variables (IV) would be useful in settings where not all firms take up GER or use it to the same extent, and it follows that we have an exogenous source of variation in the propensity to use GER. The idea is to find a factor Z that influences a firm's adoption or intensity of GER, but is not directly related to outcomes except through GER. For example, consider a scenario where the government initially rolls out GER as a pilot program in certain randomly selected regions or industries before scaling up. The random (or quasi-random) pilot assignment can serve as an instrument for actual GER usage.

Another potential instrument could be based on historical idiosyncrasies: suppose some firms historically have more women in management due to unrelated reasons (for example, legacy of a past female CEO). Such firms might be more inclined to utilize GER fully. If that historical factor is uncorrelated with current performance trends except via GER usage, it could instrument the degree of GER treatment. Admittedly, finding a strong and valid instrument in practice can be difficult. Randomized encouragement designs could be an option: the government might encourage a random subset of firms (through additional information or minor incentives) to participate in GER, and use that encouragement as an instrument to measure the impact on outcomes.

In an IV setup, one would estimate first a first-stage regression like:

$$\text{GERUsage}_i = \pi_0 + \pi_1 Z_i + \nu_i,$$

showing that the instrument Z_i (for example, being in a pilot region) affects the firm's GER usage (which could be measured as an indicator for participation or the dollar amount put into the reserve). The second stage would then be:

$$Y_i = \gamma_0 + \gamma_1 \widehat{\text{GERUsage}}_i + X_i \Gamma + u_i,$$

where X_i could include other controls, and $\widehat{\text{GERUsage}}_i$ is the predicted value from the first stage. γ_1 then measures the causal impact of GER usage on outcome Y.

Outcomes Y of interest might include: the firm's productivity or value added, the wage growth of female employees relative to male employees, promotion rates, employee retention rates, or even measures of innovation (if diversity spurs creativity). The IV approach helps address selection bias (for example, perhaps more forward-thinking or better-performing firms use GER, which would confound a naive comparison). By isolating variation in GER that is as good as random, we obtain a cleaner estimate of its effect.

5.3 Difference-in-Differences (DiD)

A difference-in-differences (DiD) strategy can be applied if GER is introduced at a specific time and it follows that we have both pre- and post-policy data for treated and untreated groups. For example, if GER is implemented nationwide at time T, one could compare changes in outcomes for firms (or workers) before vs. after T. However, without a control group, that would be just a before-after comparison which is not convincing. A better scenario is if some units receive GER earlier than others (staggered adoption) or some regions adopt it while others do not (perhaps due to local government choices or phased rollout).

Consider a case where one country or state adopts GER in year T while a similar country/state does not (or adopts later). Firms in the treated region form the treatment group and those in the other region form the control group. One can then compare the evolution of outcomes. The DiD regression would look like:

$$Y_{it} = \alpha + \beta(\text{Treated}_i \times \text{Post}_t) + \lambda_i + \delta_t + \epsilon_{it},$$

where λ_i are firm (or region) fixed effects, δ_t are time fixed effects (common shocks), and β is the DiD estimator. Treated_i indicates membership in the group that gets GER, and Post_t indicates time after implementation in the treated area. A significant β implies that the treated group's outcomes changed differentially relative to the control group's trends, consistent with a causal effect of GER.

For example, suppose some industries are given access to GER from 2025 onwards as a trial, while other industries will only obtain it in 2027. In 2026, one could compare the change from 2024 (pre-policy for all) to 2026 (post-policy for treated industries, pre-policy for control industries). Outcomes could be measured via administrative data: do treated industries show a larger increase in the fraction of training budget spent on women or in female promotion rates than control industries over that period?

The validity of DiD relies on the parallel trends assumption—that in the absence of the policy, treated and control groups would have continued on similar outcome trajectories. Checking this involves looking at pre-policy trends to ensure they where parallel. Any deviation after the policy is then attributed to the policy. One can also enhance DiD with covariates or even do triple-differences (adding another layer, for example, compare female vs male outcomes in treated vs control over time) to refine identification.

Each of these empirical strategies has its pros and cons, and the feasibility depends on how GER is implemented. Ideally, policymakers incorporate evaluation plans into the rollout (for instance, by randomizing phase-in or having clear cutoffs that can be used analytically). If GER where implemented universally without variation, researchers would have to rely on structural estimation or international comparisons (which are harder to make causal). In that sense, designing the policy with evaluation in mind is valuable.

6 Policy Design Considerations

Designing the GER for real-world implementation involves balancing inclusivity, effectiveness, and administrative simplicity. Here I discuss several key design parameters and their implications: eligibility thresholds, tiered incentive rates, and phase-in/phase-out mechanisms. These design features can determine both the policy's impact and the ease of evaluating it as discussed above.

6.1 Eligibility Thresholds

Introducing eligibility criteria or thresholds can target the policy to where it is most needed or most effective. For example, a government might decide that only firms above a certain size must comply with GER or conversely that only firms below a certain size can take advantage of GER subsidies. The direction of targeting depends on policy goals:

Targeting Smaller Enterprises: Smaller firms might have tighter budget constraints and be less likely to invest in structured training, especially for employees who might not traditionally be seen as "high-return" (for example, women in roles from which they haven't historically advanced). By allowing only SMEs (say firms with fewer than 250 employees, or with turnover below a threshold) to use GER, the policy could support those who need it most and avoid giving windfalls to large corporations that might have trained employees anyway. This kind of targeting also contains fiscal cost. On the downside, excluding large firms means missing a big part of the economy where many women work; large firms often have significant resources, but they also are where glass-ceiling effects often appear, so GER could be impactful there too.

Mandating Large Firms: Another approach is to require or incentivize only the larger firms to set aside a GER, on grounds that large firms have more capacity to absorb the program and that they employ a large share of workers. For instance, one could mandate that any company above a certain size must allocate, say, at least X% of their payroll to a GER for female training or otherwise face a penalty. This would ensure broad coverage among the most influential employers. However, making it mandatory flips the nature of GER from a voluntary incentive to a quasi-quota or obligation, which might face more resistance. A compromise is to make it voluntary but only open to large firms (smaller firms might be exempt simply due to administrative burden concerns).

Profit or Taxable Income Thresholds: As inspired by tax allocation reserves, one could set a profit ceiling up to which the firm can shield income in the GER. For example, "100% of profits up to $Y can be reserved for training women, and that portion is tax-deductible; profits above $Y are taxed normally." This encourages firms to deploy at least that amount towards the cause. It is similar to how some tax schemes allow full deduction up to a cap, then partial deduction beyond. Such a threshold ensures that the benefit is concentrated on a certain scale of operation.

Thresholds have one clear side effect: they create discontinuities in incentives, which, as discussed, could be analytically useful but also cause behavioral responses. Firms might try to game thresholds (for example, splitting a firm into two to stay below a cap, or adjusting accounting to qualify). Policymakers should design the thresholds to minimize perverse incentives—possibly by smoothing the cutoff (see below on phase-out).

6.2 Tiered Incentive Rates

Rather than a binary threshold (eligible vs. ineligible), GER could employ a tiered structure. For instance, a firm could be allowed to reserve:

Up to $A at a high subsidy rate (or deduction rate) θ_1,

The next $B at a lower rate θ_2,

etc., until beyond some amount no subsidy ($\theta = 0$).

This tiered approach is analogous to progressive taxation or tiered grant schemes. It ensures every firm has an incentive to do *something* because the first tier is accessible to all, but it controls the total benefit any single firm can obtain, preserving budget and equity across firms.

For example, the policy might say: "We will match 50% of the first $50,000 a firm spends on female training this year (tier 1), 30% of the next $50,000 (tier 2), and no match beyond $100,000." A small firm might only use tier 1; a large firm might easily hit tier 3 and beyond, but after $100k they obtain no additional subsidy. This encourages large firms to invest at least that $100k strongly, but avoids subsidizing unlimited expenditures they might have done anyway. It also avoids a sharp drop-off at \$100k because even beyond that, the firm can still invest (just without subsidy) — they are not cut off from investing, only from subsidy.

Tiering can also be structured by employee count: for example, require a certain expenditure per female employee up to a cap. Or tier by share of women: for example, if a firm has very low female representation in management, it could obtain a higher subsidy to encourage extra effort, which phases out as representation improves (rewarding catching up).

The complexity of tiers must be managed carefully. Too complex and firms might not understand or utilize the program fully. But a simple two- or three-tier system is usually manageable.

6.3 Phase-In and Phase-Out Mechanisms

Phase-in refers to gradually implementing the policy rather than all at once. Phase-out refers to ending or reducing the policy once certain conditions are met. Both can be valuable:

Phase-In: Firms may need time to adjust their training programs and budget planning. A sudden introduction of GER might catch some unprepared. By phasing in (for example, start with a subsidy of $\theta = 0.1$ (10%) in the first year, then 20% the next, etc., or start with only some industries), companies can adapt gradually. This also allows the government to ramp up budgetary allocations gradually and learn from initial years to tweak the program. From an evaluation standpoint, a phase-in can create variation over time that helps identification (like a staggered DiD or event-study analysis).

Phase-Out (Sunset Clause or Triggered Termination): The ultimate goal of GER is presumably to make itself unnecessary by achieving gender equality in opportunities. Policymakers might include a sunset clause where the program expires after, say, 10 years unless renewed. This can be good for political palatability (it's not a permanent new entitlement) and forces review of its effectiveness. Another approach is to tie phase-out to metrics: for example, once a firm reaches a certain level of female representation in management or once the gender wage gap at the firm falls below X%, the benefits reduce or the firm "graduates" from the program. This avoids giving endless subsidies to firms that have accomplished the goal, allowing resources to be focused on laggards. However, it could disincentivize reaching the goal if not careful (firms might hover just above the qualifying condition to keep benefits, akin to the threshold gaming issue). A gradual phase-out in the metric (like tapering θ as the gap closes) might alleviate that.

Phase-in/out choices may also interact with the business cycle. For instance, introducing GER during an economic downturn could be doubly beneficial: it encourages firms to invest in human capital at a time they might otherwise cut back (stabilizing employment and building skills for the recovery). One could temporarily enhance the subsidy during recessions (phase-up in bad times) and phase-down in booms if concerned about budget.

Lastly, a practical design aspect: clear guidelines on permissible use of GER funds. Firms should be accountable that funds reserved actually go to qualified training or development programs for female employees, not misappropriated elsewhere. Reporting and auditing might be necessary, though one should keep compliance simple enough to not deter participation. In design, a balance between flexibility (firms know best how to train their staff) and accountability (ensuring it's truly benefiting the target group) is needed.

In conclusion, careful design of thresholds, tiers, and phase rules can enhance GER's effectiveness and equity. It can also create natural experiments for researchers (intentionally or unintentionally) — for example, a threshold can be exploited via RDD as mentioned. Policymakers might collaborate with researchers to design these features in a way that facilitates learning about the policy's impact, thereby contributing to evidence-based refinement over time.

7 Concluding Discussion

This paper introduces the gender equality reserve, a tax-based policy instrument designed to correct underinvestment in gender-inclusive leadership. By conceptualizing gender-focused initiatives as a form of organizational capital, the GER provides a market-compatible mechanism that aligns private incentives with broader social objectives. The proposed framework draws on optimal taxation theory to show how informational frictions and externalities can result in persistent underallocation of resources toward inclusive governance, despite its potential productivity gains.

The model demonstrates that allowing firms to reserve pre-tax profits for equity-enhancing investments - such as mentorship programs, leadership training, or recruitment pipelines for women - can shift corporate behavior toward the social optimum without mandating specific outcomes. Unlike regulatory quotas or disclosure mandates, the GER leverages voluntary participation and internal cost-benefit calculations. In doing so, it complements traditional tools of diversity policy with a fiscally grounded approach that integrates inclusion into firms' investment logic.

Although developed in the context of the Swedish corporate tax system, the policy architecture is broadly applicable. Many OECD countries already use targeted tax instruments to stimulate investment in research, green technology, or regional development. The GER extends this logic to human capital and leadership diversity. Sectors undergoing institutional transformation - such as energy, defense, and technology - may be especially well-suited for implementation, given the dual imperatives of innovation and legitimacy.

The GER contributes conceptually to the literature at the intersection of public finance, corporate governance, and gender economics. It offers a theoretical foundation for treating inclusive leadership as a productivity-enhancing investment and proposes a concrete fiscal instrument to facilitate that shift. Moreover, it opens the door for rigorous empirical testing. By designing eligibility thresholds, matching rates, or sunset provisions, the policy could generate variation suitable for causal identification through methods such as regression discontinuity or difference-in-differences.

At the same time, this proposal is not without limitations. Symbolic compliance, elite capture, and heterogeneity in firms' internal governance cultures may blunt its effectiveness. As well as its limitations to profitable firms. Fiscal incentives alone are unlikely to overcome deep-seated norms or structural biases. To avoid misuse, the GER would require accountability mechanisms - clear eligibility criteria, verifiable reporting standards, and light-touch audits. Yet the administrative burden must remain modest to preserve firms' willingness to participate.

This proposal also opens avenues for empirical inquiry. Natural experiments - such as staggered rollout designs or size-based eligibility thresholds - could enable causal identification of policy effects on gender outcomes and firm performance. A behavioral extension of the model might further explore how personal experience (e.g., fatherhood) interacts with fiscal incentives in shaping managerial preferences and policy uptake.

Moreover, the GER may serve as a valuable instrument for understanding how investments in diversity affect economic performance. At the micro level, firms can assess how gender-inclusive investments affect innovation, team performance, and profitability. At the macro level, aggregated effects may influence labor productivity, growth, and allocative efficiency. The GER thus offers both a policy intervention and a measurement opportunity.

Future research should also explore several open questions: the general equilibrium effects of widespread adoption (e.g., competition for skilled female workers), long-term impacts on firm performance and wage dynamics, and the interaction of GER with other gender policies such as procurement preferences or reporting mandates. Simulation-based calibration techniques— such as the Generalized Method of Moments (GMM) or Simulated Method of Moments (SMM) — could be employed to quantify aggregate outcomes under alternative policy designs and behavioral assumptions.

Finally, the GER contributes to reframing inclusion not as a social cost but as an economic asset. It supports Sustainable Development Goals SDG 5 and SDG 8 by promoting gender equality and inclusive economic growth through firm-level action. By reclassifying inclusive leadership as a capital investment, the GER broadens the scope of what public finance can achieve in addressing structural inequality.

References

Adams, R. B. and Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 94(2):291–309.

AllBright Foundation (2024). Allbright-rapporten 2024. Accessed: 2024-11-20.

Auerbach, A., Hassett, K., and Södersten, J. (1995). Taxation and corporate investment: The impact of the 1991 swedish tax reform. *NBER Working Paper*, (No. 5189).

Barro, R. J. (1991). Economic growth in a cross section of countries. *Quarterly Journal of Economics*, 106(2):407–443.

Blundell, R. and MaCurdy, T. (1999). Labor supply: A review of alternative approaches. *Handbook of Labor Economics*, 3A:1559–1695.

Bond, S. and Xing, J. (2015). Corporate taxation and capital accumulation: Evidence from sectoral panel data for 14 oecd countries. *Journal of Public Economics*, 130:15–31.

Cummins, J. G., Hassett, K. A., and Hubbard, R. G. (1996). Tax reforms and investment: A cross-country comparison. *Journal of Public Economics*, 62(1-2):237–273.

Duflo, E. (2012). Women empowerment and economic development. *Journal of Economic Literature*, 50(4):1051–1079.

Eccles, R. G. and Serafeim, G. (2014). The impact of a corporate culture of sustainability on corporate behavior and performance. *Harvard Business Review*, 92(12):88–96.

Eissa, N. and Hoynes, H. (2004). Taxes and the labor market participation of married couples: the earned income tax credit. *Journal of Public Economics*, 88(9–10):1931–1958.

Flammer, C. (2021). Green bonds: A study of the pricing, performance, and environmental impact of green debt. *Journal of Financial Economics*, 139(2):399–417.

Goolsbee, A. (1998). Investment tax incentives, prices, and the supply of capital goods. *Quarterly Journal of Economics*, 113(1):121–148.

Goulder, L. H. and Parry, I. W. H. (2013). The value of carbon taxes. *The Economists' Voice*, 10(1):1–13.

Hall, R. E. and Jorgenson, D. W. (1967). Tax policy and investment behavior. *American Economic Review*, 57(3):391–414.

Hassett, K. A. and Hubbard, R. G. (2002). Tax policy and business investment. *Handbook of Public Economics*, 3:1293–1343.

Hodgson, D. and Sadiq, K. (2016). Gender and taxation: A global review of policy and practice. *International Tax Review*, 28(2):25–32.

House, C. L. and Shapiro, M. D. (2008). Temporary investment tax incentives: Theory with evidence from bonus depreciation. *American Economic Review*, 98(3):737–768.

Jorgenson, D. W. (1963). Capital theory and investment behavior. *American Economic Review*, 53(2):247–259.

Kari, S. (2017). The effects of tax-deductible reserves on investment incentives. *Working Paper VATT Institute for Economic Research, Helsinki*, (72).

Kleven, H. J., Kreiner, C. T., and Saez, E. (2009). The optimal income taxation of couples. *Econometrica*, 77(2):537–560.

Mankiw, N. G., Romer, D., and Weil, D. N. (1992). A contribution to the empirics of economic growth. *Quarterly Journal of Economics*, 107(2):407–437.

Metcalf, G. E. (2019). Environmental taxation and the double dividend: Evidence from carbon taxes in the u.s. *Journal of Economic Perspectives*, 33(4):125–145.

Mirrlees, J. A. (1971). Optimal taxation and public production i: Revenue maximization. *The Review of Economic Studies*, 38(2):175–208.

Mourre, G. (2014). *Tax Incentives and Economic Growth.* European Commission, Brussels.

Ø stergaard, C. R., Timmermans, B., and Kristinsson, K. (2011). Does a different view create something new? the effect of employee diversity on innovation. *Research Policy*, 40(3):500–509.

Organisation for Economic Co-operation and Development (2015). Base erosion and profit shifting (beps) action plan. Technical report, OECD Publishing, Paris. Accessed June 2025.

Post, C. and Byron, K. (2015). Women on boards and firm financial performance: A meta-analysis. *Academy of Management Journal*, 58(5):1546–1571.

Ramsey, F. P. (1927). A contribution to the theory of taxation. *The Economic Journal*, 37(145):47–61.

Södersten, J. (1989). The investment funds system reconsidered. *Scandinavian Journal of Economics*, 91(3):671–687.

Solow, R. M. (1956). A contribution to the theory of economic growth. *Quarterly Journal of Economics*, 70(1):65–94.

World Bank Group (2011). The impact of corporate tax cuts on gender equality. Policy report, World Bank Group. Accessed from institutional archives.

Zwick, E. and Mahon, J. (2017). Tax policy and heterogeneous investment behavior. *American Economic Review*, 107(1):217–248.

A Appendix

Theoretical framework

In order to assess the investment incentives of the tax allocation reserves I present the following firm investment model serving as the basis for the basis for the empirical framework. As mentioned in the introduction the model follow Södersten (1989) and Auerbach et al. (1995) traditional neoclassical investment model and Kari (2017) more recent extension of it by adding the tax allocation reserves to a similar analytical framework. Following Kari (2017) framework, and use the model without any tax allocation reserves and non-binding dividend constraints as the benchmark model in order to analyze if the tax allocation reserves are optimal from a theoretically point of view. In addition, I thereafter investigate the model with an annual interest cost attached to it and when the dividend constraint is binding.

The neoclassical model

Consider the following neoclassical model of firm behavior where the cost of capital is derived under a general system of corporate taxation. For simplicity, assume that the firm is a value-maximizing firm that only produce capital, K, as its input financed from equity and the firm's own generated profits. In order to guarantee a maximum solution to the optimization problem assume further that the firm's production function, $F_K > 0$, exhibit a positive but diminishing marginal product and that $F_{KK} < 0$. The firm's budget constraint follows the fundamental cash flow constraint and the firms spends its total profits, $\pi(K)$, on dividends, Div, investment, I, and taxes, T. For simplicity, and without loss of generalization, let the prices be normalized to 1.

$$\pi(K) = Div + I + K \tag{7}$$

The capital stock depends on investment and depreciates at rate $\delta \in (0, 1)$ with the equation of motion:

$$\dot{K} = I - \delta K \tag{8}$$

Let C denote the amount of capital the firm allocate to the reserve, constrained to a share of profit after depreciation $f \in (0, 1)$, with $C \leq f[\pi(K) - ak]$ where k is the accounting stock of capital and a the financial depreciation. Furthermore, assume the tax allocation reserve, entail an exogenous recovery procedure at every point in time, and that a constant share $b \in (0, 1)$ of the accumulated reserve stock, R, is the firms taxable income. In the Swedish tax system, the reserves can be transferred voluntarily within six years. However, since the firm is value-maximizing and deferring tax payment is profitable an optimizing firm is assumed to choose the longest length of deferral. The equation of motion for the reserve stock increases with contribution to the reserve C and decreases with the use of the reserve against investment, G, and the gradual decay of the stock at rate b:

$$\dot{R} = C - G - bR \tag{9}$$

The accounting stock of capital increases with investment and decreases with fiscal depreciation:

$$\dot{k} = I - ak \tag{10}$$

The firms tax amount will then become:

$$T \equiv \tau[\pi(K) - ak - (C - bR)] \tag{11}$$

where $\tau \in (0, 1)$ is the corporate tax level multiplied by the taxable income, calculated as the operating profit, $\pi(K)$, minus the fiscal depreciation, ak, and the net amount to the tax allocation reserve, C-bR.

The firms tax amount becomes:

$$T \equiv \tau[\pi(K) - ak - (C - bR)] \tag{12}$$

In addition, C, is constrained to the share of profit net of fiscal depreciation and for the reserve R and the use of reserve against investment G I set up the following restrictions:

$$0 \leq C \leq f[\pi(K) - ak] \qquad R \geq 0 \qquad 0 \leq G \leq I$$

Since dividends, Div, may not be larger than the profit after fiscal depreciation minus contribution to the reserves and taxes:

$$Div \leq \pi(K) - ak - (C - bR) - T \tag{13}$$

From then Euler-equation approach the equity-financed firm then solves the following maximization problem in order to maximize the present value of its cash flow to the owners:

$$\begin{aligned} Max \qquad V(0) = \int_0^\infty Div\, e^{-\rho t} \qquad s.t \quad & \qquad (14)\\ \pi(K) = Div + I + K \quad & \qquad (15)\\ \dot{K} = I - \delta K \quad & \qquad (16)\\ \dot{R} = C - G - bR \quad & \qquad (17)\\ \dot{k} = I - ak \quad & \qquad (18)\\ T \equiv \tau[\pi(K) - ak - (C - bR)] \quad & \qquad (19)\\ 0 \leq C \leq f[\pi(K) - ak] \qquad R \geq 0 \qquad 0 \leq G \leq I \quad & \qquad (20)\\ Div \leq \pi(K) - ak - (C - bR) - T \quad & \qquad (21) \end{aligned}$$

The Lagrange then becomes:

$$\begin{aligned} L = Div + q_1[(1-\tau)\pi(K) - Div + \tau(ak + C - bR) - \delta K] + q_2[(1-\tau)\pi(K) - Div + \tau(ak + C - bR) - ak] \\ + q_3[C - bR] + \mu_1 C + \mu_2\{f[\pi(K) - ak] - C\} + \mu_3 R + \mu_4 G + \mu_5[(1-\tau)\pi(K) - Div + \tau(ak + C - bR) - G] \\ + \mu_6\{(1-\tau)[\pi(K) - ak - C] + (1-\tau)bR - Div] \end{aligned} \tag{22}$$

where $q_1 - q_3$ are the co-state variables for the state variables K, k, R and $\mu_1 - \mu_6$ are the shadow prices of the constraints $0 \leq C \leq f[\pi(K) - ak]$ $R \geq 0$ $0 \leq G \leq I$, and $Div \leq \pi(K) - ak - (C - bR) - T$.

The first order conditions:

$$\frac{\partial L}{\partial Div} = 1 - q_1 - q_2 - \mu_5 - \mu_6 = 0 \tag{23}$$

$$\frac{\partial L}{\partial C} = \tau(q_1 + q_2 + \mu_5 + \mu_6) + q_3 + \mu_1 - \mu_2 - \mu_6 = 0 \tag{24}$$

$$\frac{\partial L}{\partial G} = -q_2 - q_3 + \mu_4 - \mu_5 = 0 \tag{25}$$

$$\dot{q}_1 = (\rho + \delta)q_1 - (1-\tau)\pi'(q_1 + q_2 + \mu_5 + \mu_6) - f\pi'\mu_2 \tag{26}$$

$$\dot{q}_2 = \rho q_2 - \tau a(q_1 + q_2 + \mu_5 + \mu_6) + aq_2 + fa\mu_2 + a\mu_6 \tag{27}$$

$$\dot{q}_3 = \rho q_3 + \tau b(q_1 + q_2 + \mu_5 + \mu_6) + bq_3 - \mu_3 - b\mu_6 \tag{28}$$

Since $q_1 + q_2 + \mu_5 + \mu_6 = 1$ from equation (17) the equations can be rewritten:

$$\frac{\partial L}{\partial C} = \tau + q_3 = \mu_2 - \mu_1 + \mu_6 \tag{29}$$
$$\dot{q}_1 = (\rho + \delta)q_1 - (1-\tau)\pi' - f\pi'\mu_2 \tag{30}$$
$$\dot{q}_2 = \rho q_2 - \tau a + a q_2 + f a \mu_2 + a\mu_6 \tag{31}$$
$$\dot{q}_3 = \rho q_3 + \tau b + b q_3 - \mu_3 - b\mu_6 \tag{32}$$

The standard corporate model without tax-deductible reserves and non-binding dividend constraints:

Consider first the model when no taxable reserves are allowed. In this case all shadow prices, the amount to the reserve and reserve are set to zero and it follows that we have the following first order conditions and two co-state variables, q_1 and q_2:

$$\frac{\partial L}{\partial Div} = 1 - q_1 - q_2 - \mu_5 - \mu_6 = 0 \tag{33}$$
$$\dot{q}_1 = (\rho + \delta)q_1 - (1-\tau)\pi' - f\pi'\mu_2 \tag{34}$$
$$\dot{q}_2 = \rho q_2 - \tau a + a q_2 + f a \mu_2 + a\mu_6 \tag{35}$$

In order to consider the effects of taxation on investment incentives we consider the cost of capital by analyzing the marginal condition for the optimal capital stock in the long-run equilibrium. Since both our shadow prices μ_5 and μ_6 are zero we know from our first order condition that $q_1 + q_2 = 1$. By substituting this into $\dot{q}_1 = (\rho + \delta)q_1 - (1-\tau)\pi' - f\pi'\mu_2$ we can derive the optimal capital stock $\pi'(K)$:

$$\pi'(K) = \frac{q_1}{1-\tau}(\rho + \delta) \tag{36}$$

using again that $q_1 + q_2 = 1$ and solving for $q_2 = \rho q_2 - \tau a + a q_2 + f a \mu_2 + a\mu_6$ we obtain:

$$q_2 = \frac{\tau\alpha}{\alpha\rho} \equiv \tau A \tag{37}$$

where $A \equiv \frac{\alpha}{\alpha+\rho} \in (0,1)$ is the present value of fiscal depreciation allowances on a unit of capital calculated at the firm's discount rate ρ. Furthermore, q_2 ix the present value of tax savings from fiscal depreciation and $q_1 = 1 - q_2$ the net cost of having an asset of unit value. By using this I can rewrite the the optimal capital stock as the standard expression for cost of capital:

$$\pi'(K) = \frac{1-\tau A}{1-\tau}(\rho + \delta) \tag{38}$$

The quotient term $\frac{1-\tau A}{1-\tau}$ is also known as the tax component of the cost of capital Bond and Xing (2015) which means that corporate taxation affects incentives to invest by reducing the return on marginal investment $(1-\tau)$ and the cost of investment $(1-\tau A)$. When A is equal to 1 we can see that the cost of capital no longer depend on the tax component of the cost of capital which can only happen when the firms discount rate ρ is equal to zero. This means that under cash flow tax the corporation tax has no impact on the cost of capital. Next, the derivation follows the cost of capital with tax allocation reserves and non-binding constraints.

The standard corporate model with tax-deductible reserves and non-binding dividend constraints:

In the case with tax deductible reserves and non-binding dividend constraint one are allowed to defer tax payments but not to finance investment from untaxed funds. Therefore the use of reserve against investment, G, and the shadow prices $\mu_4 - \mu_6$ are set to zero. Hence, the only way to release funds from the reserves is to return them as taxable income. Note, that in the previous Swedish Investment fund system (Investeringsfonden) G>0 and firms could finance investment from untaxed funds. First, analyze the scenario when the firm has an incentive to allocate some of its profits (C>0) to the reserves. This can be achieved analyzing the cost and benefits from an increase in C: $\frac{\partial L}{\partial C} = \tau + q_3 = \mu_2 - \mu_1 + \mu_6$. From this we can see that when no amount is allocated to the reserve (C=0) we must have that $\mu_1 > 0$ and $\mu_2 = 0$, meanwhile in the opposite case and when some amount is placed to the reserve $\mu_1 = 0$ and $\mu_2 > 0$. Using the fact that $q_1 + q_2 = 1$ and $\dot{q}_3 = \rho q_3 + \tau b + b q_3 - \mu_3 - b\mu_6$ I can derive the co-state variable of the reserve $q_3 = -\frac{\tau b - \mu_3}{\rho + b}$. Inserting this into $\frac{\partial L}{\partial C} = \tau + q_3 = \mu_2 - \mu_1 + \mu_6$ we obtain:

$$\frac{\partial L}{\partial C} = \tau + q_3 = \tau(1 - B) + \frac{\mu_3}{\rho + b} = \mu_2 - \mu_1 \tag{39}$$

where $B = \frac{b}{\rho + b} \in (0, 1)$ is the present value of a one unit profit which is delayed due to allocation to the reserve and no taxation. Since B<1 and $\mu_3 > 0$ it follows that we have that $\mu_2 > 0$ and $\mu_1 = 0$. This indicates that the firm chooses to put the maximum amount to the reserve and that the reserve must be positive (R>0) and that $\mu_3 = 0$ and $q_3 = -\tau B$. We can now derive $\mu_2 = \tau(1 - B)$. Since $B \in (0, 1)$ $\mu_2 > 0$ and It follows that from reasoning above that the reserve R must be positive. Using this fact and $\frac{\partial L}{\partial Div} = 1 - q_1 - q_2 - \mu_5 - \mu_6 = 0$ I can derive $\dot{q}_2 = \rho q_2 - \tau a + a q_2 + f a \mu_2 + a \mu_6$:

$$\dot{q}_2 = [(1 - f)\tau + f]A \tag{40}$$

Using our first order condition $\frac{\partial L}{\partial Div} = 1 - q_1 - q_2 - \mu_5 - \mu_6 = 0$ and substituting the values of μ_2 and q_2 into $\dot{q}_1 = (\rho + \delta)q_1 - (1 - \tau)\pi' - f\pi'\mu_2$ we can now derive the cost of capital:

$$\pi'(K) = \frac{1 - e_{TAR}A}{1 - e_{TAR}}(\rho + \delta) \tag{41}$$

where $e_{TAR} \equiv (1 - f)\tau + fB\tau$ is the effective corporate tax rate which gives the weighted average of directly paid taxes ($(1 - f)\tau$) and the present value of deferred taxes ($fB\tau$). Since the effective tax rate can be rewritten as $e_{TAR} = \tau - f\tau(1 - B)$ and $\tau, f, B \in (0, 1)$ we can conclude that $e_{TAR} = \tau - f\tau(1 - B) < \tau$ and that the effective tax rate, e_{TAR}, is smaller than the statutory tax rate, τ. As a result, the cost of capital is lower than in the standard case and theoretically the firm have incentive to use the tax allocation reserve when the dividend constraint is non-binding as the cost of investment is lower.

B

Proof of Lemma 1. For ease of exposition, analyze the scenario of interior solutions. The first-order condition for G under GER is $(1 - t)F_G(K^*, G^*) = 1 - t\sigma$. Implicitly differentiate with respect to σ (treating K^* as a function of σ as well, though K^* is determined by the separate condition F_K and is less sensitive directly to σ). We obtain:

$$(1 - t)\left[F_{GG}(K^*, G^*)\frac{dG^*}{d\sigma} + F_{GK}(K^*, G^*)\frac{dK^*}{d\sigma}\right] = -t.$$

Because $F_{GG} < 0$ (concave in G) and assuming regular conditions like F_{GK} not too large to reverse sign (indeed, in many cases $F_{GK} \geq 0$, meaning K and G are complements or independent), the term in brackets is negative times $dG^*/d\sigma$. Meanwhile, the right side is negative ($-t < 0$). Thus, $dG^*/d\sigma$ must be non-negative. If $F_{GK} = 0$ (perfect separability), this simplifies to $F_{GG}(K^*, G^*)\frac{dG^*}{d\sigma} = -t/(1 - t)$, yielding $dG^*/d\sigma = \frac{t}{1-t}\frac{1}{|F_{GG}|} > 0$. Existence of a corner at $G = 0$ for $\sigma = 0$ means initially G was not profitable; any $\sigma > 0$ that reduces the effective cost will induce $G > 0$ once the condition $F_G(K, 0) = \frac{1 - t\sigma}{1 - t}$ is met. This occurs for arbitrarily small $\sigma > 0$ if $(1 - t)F_G(K, 0)$ was just below 1 (otherwise, if it was well below, σ needs to increase until the threshold $\sigma^{\dagger}$ in Proposition 1). Hence proved.

Proof of Proposition 1. We analyze the firm's optimization problem as σ varies. Define $\Psi(G;\sigma) := (1-t)F(K^*(\sigma), G)-(1-t\sigma)$, where $K^*(\sigma)$ is chosen optimally (or along the K-FOC which is independent of G if F is separable). This function Ψ captures the net marginal benefit of a small increase in G at level G, given subsidy σ. In the no-policy case $\sigma = 0$, $\Psi(G;0) = (1-t)F(K^*, G)-1$. By assumption, at $G = 0$, $\Psi(0;0) < 0$ (no investment was optimal, meaning initial slope is negative or just at zero if indifferent). As G increases, Ψ eventually becomes negative (concavity ensures Ψ decreases as G increases even if it started positive at $G = 0$—but here it starts negative). So $G^*(0) = 0$. Now consider increasing σ. $\partial\Psi/\partial\sigma = t > 0$ (since Ψ has $-(1-t\sigma)$, derivative is t). So at $G = 0$, $\Psi(0;\sigma) = (1-t)F(K^*, 0)-(1-t\sigma)$. For small σ, this becomes $(1-t)F(K^*, 0)-(1-t)+t\sigma = (1-t)F(K^*, 0)-(1-t)+O(\sigma)$. If $(1-t)F(K^*, 0)$ was only slightly less than 1, a small σ will make $\Psi(0;\sigma) \geq 0$, meaning an infinitesimal G yields nonnegative net benefit, prompting positive investment. Solve $(1-t)F(K^*, 0) = 1-t\sigma$ for σ to find the boundary $\sigma^\dagger$. For σ below that, $\Psi(0;\sigma) < 0$ so $G = 0$ remains optimal. For σ at or above that, $\Psi(0;\sigma) \geq 0$ and by continuity there will exist a $G > 0$ where $\Psi(G;\sigma) = 0$ (FOC satisfied) with positive G. Uniqueness is ensured by quasi-concavity. Hence the threshold $\sigma^\dagger$ exists and has the stated property. ■

Proof of Proposition 2. Consider the social welfare $W = (1-t)[F(K,G)-K-G]+t\sigma G+B(G)$. Differentiate w.r.t. G (treating σ as instrument but K adjusting optimally as well):

$$\frac{\partial W}{\partial G} = (1-t)F_G(K,G)-(1-t)+t\sigma+B'(G).$$

At a social optimum (first-best), set this to zero, yielding $(1-t)F_G(K,G)+B'(G) = 1-t\sigma$. If the government can choose σ, it will do so anticipating the firm's $G^*(\sigma)$ which satisfies $(1-t)F_G(K,G) = 1-t\sigma$ at the firm optimum. Combining these, at the welfare optimum, we need $(1-t)F_G = 1-t\sigma^*$ *and* $(1-t)F_G+B'(G) = 1-t\sigma^*$. Canceling $(1-t)F_G$ from both, we obtain $B'(G^*) = 0$. This indicates that the maximum welfare is achieved when $B'(G) = 0$, that is the external benefit is fully realized to the point of zero marginal external benefit (the first-best G). The corresponding σ^* satisfies $1-t\sigma^* = (1-t)F_G(K,G^*)$. Since at optimum $B'(G^*) = t\sigma^*$ (from equating the two conditions), it follows that we have $t\sigma^* = B'(G^*)$. If $B'(\cdot)$ is decreasing and $B'(0) > 0$, then σ^* is positive, otherwise if $B' \equiv 0$, then $\sigma^* = 0$. This aligns with intuition discussed in the text. ■

B Model and Theoretical Justification

This section presents a stylized model to justify the Gender Equality Reserve (GER) as a fiscal instrument within the framework of optimal taxation. The aim is to formalize why firms may underinvest in gender-inclusive leadership and how a tax-based policy can correct this distortion.

We consider a representative firm that allocates investment between two capital types: traditional capital (K) and gender-inclusive capital (G), such as initiatives that promote leadership diversity and inclusive governance. Output is produced using a Cobb-Douglas production function:

$$Y = AK^\alpha G^\beta, \quad \text{with } \alpha+\beta < 1,$$

where A denotes total factor productivity. The firm maximizes after-tax profit:

$$\max_{K,G} \left\{(1-\tau)[AK^\alpha G^\beta - r_K K - r_G G]\right\},$$

with τ as the corporate profit tax rate, and r_K, r_G as the user costs of K and G, respectively.
In equilibrium, the marginal productivity of G equals its user cost:

$$\beta AK^\alpha G^{\beta-1} = r_G.$$

However, informational frictions, delayed payoffs, and positive externalities (such as reputational or social value) often depress the perceived private return on G. Firms will thus underinvest in gender capital relative to the social optimum. We define ε_G as the elasticity of G with respect to its after-tax user cost.

Introducing a fiscal instrument such as the GER reduces the effective cost of G via:

$$r_G^{\text{net}} = r_G(1 - \tau_G),$$

where τ_G is the deductibility rate under the GER. The firm's revised optimization problem becomes:

$$\max_{K,G} \left\{(1 - \tau)[AK^{\alpha}G^{\beta} - r_K K - r_G(1 - \tau_G)G]\right\}.$$

From optimal tax theory, the optimal incentive rate satisfies:

$$\tau_G^* = \frac{\varepsilon_G}{1 + \varepsilon_G} \cdot \frac{\Delta MRS}{r_G},$$

where ΔMRS captures the divergence between the social and private marginal rates of substitution.

This framework provides a rationale for differentiated tax treatment of gender-inclusive capital. The more elastic the firm's response to cost reductions, and the greater the externality or underestimation of G's productivity, the stronger the justification for targeted fiscal incentives.