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How should South Africa redesign education, industrial policy, and fiscal incentives to harness artificial intelligence for productivity growth while limiting labour market disruptions?

Introduction

South Africa's labour market entered the second half of 2026 under severe strain, with the official unemployment rate reaching 33.6% in the second quarter, and the youth rate (ages 15 to 34) stood at 47.4% (Statistics South Africa: 2026). Artificial intelligence (AI) enters this environment carrying a double promise and a double risk. It offers genuine productivity gains to firms that deploy it well, yet it may displace the very workers the economy can least afford to lose. Policymakers are tempted to treat these as separate problems: pursuing AI-driven growth through one set of instruments, and labour protection through another. This essay argues that the split is a mistake, and that fiscal incentive design is the instrument best placed to resolve it.

South Africa's fiscal incentives subsidise technology adoption largely without regard to labour market consequences, rewarding firms for investment decisions rather than for what that investment produces. This essay proposes that incentives be made conditional on firms pairing AI adoption with verified investment in worker upskilling. Education and industrial policy are treated as the two channels that deliver this conditionality. Education supplies the skills firms must invest in, and industrial policy, through public procurement and sector compacts, extends the same logic to firms the tax system does not reach.

The essay is a literature study drawing on National Treasury, SARS and parliamentary records, the behavioural economics literature and 2026 Budget material. Section 1 diagnoses the current incentive architecture. Section 2 sets out the behavioural case for conditionality. Section 3 designs the mechanism, the Conditional Adoption Credit. Section 4 explains how education and industrial policy deliver it, and Section 5 weighs the trade-offs. The conclusion summarises the findings, and the recommendations propose a pilot.

1.The diagnosis

South Africa's fiscal architecture already contains instruments for both technology investment and labour market support, but it runs them as parallel tracks. The Section 11D research and development (R&D) incentive, introduced in 2006 to replace Section 11B regime, allows a 150% deduction on qualifying R&D and is adjudicated jointly by the Department of Science,

Technology and Innovation (DSTI), SARS, and National Treasury (SARS: 2026a). It reaches AI only where the work meets the statutory definition of R&D, and internal-use systems are largely excluded (National Treasury: 2021). Where AI R&D does qualify, no condition attaches to the employment consequences of the investment.

Section 12I offers an instructive precedent. It paired a capital allowance for new or upgraded industrial projects with an additional allowance for skills development and training, an implicit acknowledgement that investment and skills are complementary (Republic of South Africa: 1962). Yet when its sunset date arrived on 31 March 2020, Treasury let it lapse, stating that there was no conclusive evidence it had produced behavioural change in the firms claiming it (National Treasury cited in Parliamentary Monitoring Group: 2025). This is a significant admission. Treasury judges incentives by whether they change firm behaviour, not merely whether firms claim them. But it applies that standard retrospectively, incentive by incentive, at sunset review, and has not built it forward into incentive design.

The Employment Tax Incentive (ETI) illustrates the other half of the gap. It reduces employers' monthly pay-as-you-earn (PAYE) liability for hiring workers aged 18 to 29 and runs until February 2029 (SARS: 2026b). The incentive is blind to whether the claiming firm is adopting technology that offsets its own employment creation elsewhere. Each incentive sits in a different part of the tax code and is reviewed on its own cycle. A firm can claim the Section 11D deduction for an AI system that reduces headcount in one division while claiming ETI for new hires in another, and no mechanism connects the two. Table 1 summarises what each of the three instruments rewards and what labour condition, if any, it attaches.

Table 1: Fiscal incentives and their labour conditions

Incentive	Rewards	Labour or skills condition
Section 11D (R&D)	Qualifying R&D spending	None
Section 12I (lapsed 2020)	Industrial investment	Training allowance, not tied to the technology adopted
ETI	Hiring workers aged 18 to 29	None linked to technology adoption

Source: Author's compilation (SARS: 2026a; 2026b; and National Treasury: 2021; Republic of South Africa: 1962)

No instrument links technology investment to workforce outcomes.

As AI-driven automation accelerates, this blind spot carries a real cost: fiscal policy risks becoming an unintentional subsidy for displacement just when the labour market can least absorb it. Treasury already has the right instinct, that incentives should be judged by behavioural change, but it has not asked what behaviour it wants to see across incentives simultaneously. The next section explains why conditionality, rather than incentive size, drives how firms respond.

2.The Behavioural Case

Section 1 identified a gap: Treasury evaluates incentives by whether they produce behavioural change, yet designs them without building that standard in. Behavioural economics explains why the design of an incentive matters more than its size. A randomised schooling transfer in Malawi split recipients into conditional and unconditional arms with comparable transfer amounts, and conditionality raised schooling outcomes by more than the unconditional transfers did (Baird et al: 2011). The condition, not the money alone, changed the conduct. The same logic applies to firms. An unconditional deduction, such as the Section 11D treatment of qualifying AI R&D, gives a firm no reference point against which to reconsider its automation decision. It simply adds to profit, and a profit-maximising firm absorbs it like any other windfall, with no reason to change how it treats the workers its technology affects.

This also explains why Treasury found no evidence that Section 12I changed behaviour. Its training allowance was never a condition on the capital allowance. It was an adjacent deduction a firm could claim or ignore, and nothing required firms to connect training to the technology being subsidised. Treasury's own verdict, that the incentive favoured capital over labour, is consistent with this design: it rewarded investment and left the workforce outside the condition.

A second behavioural principle strengthens the case: loss aversion. Prospect theory shows that losing something already held weighs more heavily on a decision-maker than gaining an equivalent amount not yet held (Kahneman and Tversky: 1979). An unconditional upfront deduction forfeits this effect. An incentive granted provisionally and retained only if the firm later demonstrates verified upskilling tied to the affected roles turns compliance from the cost of claiming a new benefit into the cost of avoiding the loss of one already banked. The two

designs are fiscally equivalent but not behaviourally equivalent. The second may well produce higher compliance, although this is an inference from individual-level evidence that a pilot would need to test.

The behavioural evidence above concerns individuals, so institutional theory supplies the organisational level. Firms respond not only to payoffs but to the rules, norms and expectations of their field (DiMaggio and Powell: 1983). Rules such as the Section 11D definition of qualifying R&D, applied by the DSTI, SARS and Treasury adjudication committee, act as coercive pressures that shape which projects firms propose. Technology is not a neutral input either: it is shaped by such rules and in turn reshapes roles and routines (Orlikowski: 1992). The risk is ceremonial conformity, where firms adopt the form of a rule without changing practice (Meyer and Rowan: 1977). A conditional incentive must therefore verify outcomes, not just procedures.

The same lens applies to workers. Workers facing AI-driven displacement risk often underinvest in reskilling because the effort cost is immediate while the payoff is uncertain and deferred, a pattern consistent with present bias. A firm-side incentive that funds training but leaves participation opt-in will under-deliver, just as opt-in retirement saving does. The behaviourally stronger design enrols workers by default and requires an explicit opt-out (Thaler and Sunstein: 2008).

Together these points yield a specific design proposition rather than a general appeal for better incentives. On the firm side, incentives should be conditional and loss-framed, tied to a verifiable, automation-specific upskilling outcome rather than a generic training allowance. On the worker side, participation should be the default. Section 3 turns this proposition into a mechanism Treasury could legislate.

3.The mechanism

The proposal is modest in institutional terms: it restructures an incentive that already exists. Section 11D allows a 150% deduction on qualifying R&D, which is the ordinary 100% deduction plus a 50% enhancement, with projects adjudicated by a committee drawn from the DSTI, SARS and National Treasury (SARS: 2026a). Under what this essay calls a Conditional Adoption Credit, the enhancement would be split from the base deduction. The base deduction is granted on filing. The enhancement vests only at a verification date, set at 24 months, and

only if the firm has met an upskilling condition. Because deploying an off-the-shelf AI system is not R&D (National Treasury: 2021), extending the credit to deployment expenditure needs a legislative amendment, which this essay proposes.

The condition is outcome-based and specific to the technology. At filing, the firm identifies the roles its AI system materially affects and commits to certified reskilling or redeployment of the workers in them, evidenced by accredited-provider records. The test is the share of affected workers reskilled or redeployed, not a headcount floor, which would deter adoption and undercut the productivity objective. This is the design Section 2 called for: conditional, loss-framed and tied to a verifiable outcome.

Calibration determines whether firms accept the condition. Table 2 uses illustrative assumptions: R10 million of qualifying AI expenditure and the 27% corporate tax rate, so the R5 million enhancement is worth R1.35 million in tax.

Table 2: Illustrative calibration of the Conditional Adoption Credit

Scenario	Reskilling cost	Firm net gain	Cost to fiscus
Unconditional (today)	None	R1.35m	R1.35m, no labour outcome
Conditional, obligation R0.9m	R0.9m	R0.45m	R1.35m, R0.9m of reskilling delivered
Conditional, obligation R1.6m	Declined	Base deduction only	Nil

Source: Author's calculations on the stated assumptions

The rule for Treasury is simple: the required reskilling cost must sit below the tax value of the enhancement. A firm facing a cheaper obligation gains by complying, and a firm facing a dearer one keeps the base deduction, so adoption is never penalised, only the bonus is forfeited. The fiscus also gains something it does not get today: it pays the enhancement only where reskilling has been delivered.

Administration can largely use existing machinery. The adjudication committee's mandate would widen to include the labour condition. SARS already administers the Employment Tax

Incentive and collects payroll data through the monthly employees' tax return (SARS: 2026b), which would let it cross-check claims against ETI claims and headcount movements, closing the gap identified in Section 1. That cross-check requires a statutory data-sharing provision, since DSTI and SARS data cannot currently be matched (National Treasury: 2021). A statutory precedent for such a condition already exists: the Employment Tax Incentive Act allows the Minister to disqualify employers who do not meet the prescribed conditions, including requirements for the training of employees, although none has yet been prescribed (SARS: 2026b). Verification relies on providers accredited by the Sector Education and Training Authorities (SETAs), so the credit depends on, and could help drive, the skills ecosystem reforms announced in the 2026 Budget Speech (National Treasury: 2026).

Finally, the design builds in the test Treasury applies retrospectively. Behavioural-change metrics are fixed before the first claim: the share of affected workers reskilled, redeployment rates, and employment trends in claiming firms against comparable non-claimants. Because AI will keep reshaping job roles, the definition of affected roles should be revisited at each review. A sunset review can then answer the question Treasury asked of Section 12I with data designed to answer it.

4. Delivery through education and industrial policy

A fiscal mechanism changes behaviour only if institutions can deliver what it demands. The Conditional Adoption Credit needs credible reskilling for affected workers, and it needs a way to carry the same logic to firms that never claim it. Education policy supplies the first and industrial policy the second.

On education, the 2026 Budget Speech acknowledged that the skills development levy, which funds the SETAs and the National Skills Fund, had not delivered the outcomes expected, and it signalled a review and a move towards dual training that combines classroom and workplace learning (National Treasury: 2026). The credit gives that review a concrete design problem to solve. Employers buy the reskilling, and they carry the loss if it fails, because the enhancement lapses unless affected workers are reskilled or redeployed. Providers then earn accreditation and repeat business on the share of workers who complete certified training and are redeployed, not on enrolment counts. This is dual-training logic applied to workers already in jobs, with employers shaping content because their own money depends on it. One safeguard is needed:

reskilling spend should count towards either the credit or a levy grant claim, never both, so that the state does not subsidise the same training twice.

The focus on incumbent workers is deliberate. Curriculum reform in technical and vocational colleges and universities matters for new entrants but pays off over years, while the displacement risk sits in the current workforce now. The sequencing is therefore incumbent reskilling through the credit in the near term, with curriculum reform following over the medium term. Credit-funded demand from firms also tells providers and curriculum designers which skills the market will pay for.

Industrial policy extends the logic through public procurement. Under the Preferential Procurement Regulations of 2022, organs of state award up to 20 points (contracts up to R50 million) or 10 points (above R50 million) for specific goals written into tender documents (National Treasury: 2022). The regulations define those goals non-exhaustively, leaving room for a goal that rewards verified workforce transition alongside technology adoption in tenders for information technology services, outsourced operations and similar contracts. A firm winning government work then faces the same conditional logic whether it claims the credit or not, which widens coverage beyond the R&D incentive's reach. At sector level, the Department of Trade, Industry and Competition could host adoption and transition compacts, in which support is offered in return for published workforce commitments.

The two channels share a principle with the fiscal mechanism. Whether public money takes the form of tax forgone, levy spent or contracts awarded, it should buy an outcome that is measured and verified, not simply be disbursed.

5. Trade-offs and limits

The design carries costs, and four deserve direct treatment.

The first is fiscal cost. The credit keeps the existing 50% enhancement, so it does not raise the subsidy rate, but extending it from R&D to deployment widens the base. Treasury estimated the revenue forgone on the R&D incentive at just under R5.7 billion between 2005/06 and 2018/19, a modest sum partly because only 1,211 companies took part over roughly fourteen years (National Treasury: 2021). Deployment spending is likely to be far larger than R&D spending. The same review cites research suggesting that subsidy rates above 25% risk costs

outrunning benefits (National Treasury: 2021). The design therefore needs a per-firm cap and a sunset review. The vesting rule also limits costs, because firms that miss the condition forfeit the enhancement.

The second is administrative capacity, where government's own record is a warning. When pre-approval began in 2012, 1,591 projects arrived in the first month and created an instant backlog. Fewer than a third of firms filed the required progress reports, and DSTI and SARS data cannot be matched because of legislation and secrecy provisions (National Treasury: 2021). The ETI cross-check in Section 3 needs an explicit statutory data-sharing provision. The vesting rule also enforces reporting in a way the current regime does not. The department's answer to non-reporting is to withdraw approval, whereas here a firm that fails to report simply loses the enhancement.

The third is gaming, the ceremonial conformity described in Section 2. Firms could declare few affected roles or buy cheap certificates. The outcome test (workers redeployed or certified), accreditation based on placement and a comparison against non-claimants all limit this. Evaluation must be designed in from the start. The World Bank's evaluation of the R&D incentive could match only 18 treated and 14 control firms, too few for firm conclusions, and found no statistically significant effect on employment (National Treasury: 2021).

The fourth is coverage. A deduction rewards profitable firms, and support under the R&D incentive is skewed towards large companies. Government has declined refundable credits mainly on grounds of fiscal affordability (National Treasury: 2021). The small and medium enterprises (SMEs) most exposed to displacement may lack the tax capacity to claim, so the procurement channel and sector compacts only partly close this gap.

Conclusion

This essay asked how South Africa should redesign education, industrial policy and fiscal incentives to harness AI for productivity growth while limiting labour market disruption. It approached the question as a literature study, drawing on National Treasury, SARS and parliamentary records, the behavioural economics literature and 2026 Budget material.

The findings build in sequence. Section 1 showed that the current incentive architecture runs technology investment and labour market support as parallel tracks: Section 11D rewards

qualifying R&D, the Employment Tax Incentive rewards youth hiring, and nothing connects them. Treasury judges incentives by whether they change behaviour, but only after the fact, as the lapse of Section 12I showed. Section 2 argued that the design of an incentive, not its size, shapes firm and worker response, through conditionality, loss aversion and defaults. Section 3 turned this into the Conditional Adoption Credit, in which tax enhancement vests only when affected workers are verifiably reskilled or redeployed. Section 4 showed that education policy supplies the accredited reskilling, while industrial policy, through public procurement and sector compacts, extends the logic beyond the tax base. Section 5 acknowledged the costs: fiscal exposure, limited administrative capacity, gaming and uneven coverage.

The answer to the question is therefore that South Africa need not choose between AI-driven productivity and labour market stability. It must stop funding the first without asking about the second. The recommendations that follow set out how to take a first step.

Recommendations

This essay recommends four steps, sequenced to test the proposal before it is scaled.

First, National Treasury should announce a time-limited, capped pilot of the Conditional Adoption Credit in a forthcoming Budget. The pilot should run on the existing Section 11D base, qualifying AI-related R&D, so that it needs no extension to deployment spending and adds no new fiscal exposure. Extension to deployment should follow only if the pilot succeeds.

Second, Parliament should legislate a data-sharing provision between the Department of Science and Innovation and SARS, using anonymised firm-level data. Without it, the credit cannot be verified or cross-checked against the Employment Tax Incentive.

Third, evaluation criteria should be fixed before the first claim: the share of affected workers reskilled or redeployed, and employment in claiming firms against comparable non-claimants. The sample must be large enough to support conclusions, which the World Bank's evaluation of the R&D incentive was not.

Fourth, National Treasury should clarify, in procurement guidance, that a workforce-transition goal may be scored under the specific goals provision, and the skills ecosystem review should adopt outcome-based accreditation for reskilling providers.

On workability, the proposal is credible as a pilot but not yet as a national instrument. Its strengths are that it restructures an incentive that already exists, costs the fiscus little where firms fail the condition, and applies Treasury's own test of behavioural change. Its weaknesses are administrative capacity, the need for new legislation, and coverage that favours profitable firms over the SMEs most exposed to displacement. The credit would fail if verification became box-ticking, or if reskilling accreditation proved unreliable. The pilot exists to find out which of these risks is real.

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