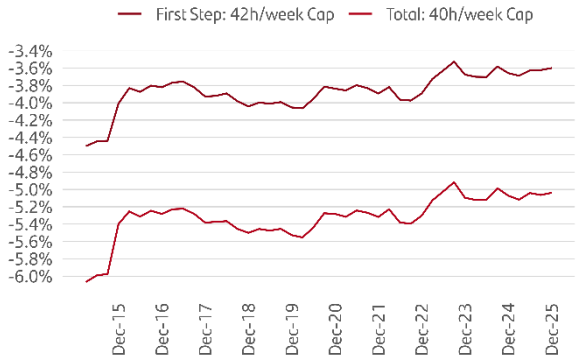
# Brazil Macro Special Report

## What if... Working Hours Were Reduced? A simulation of the working-hours reform

Henrique Danyi

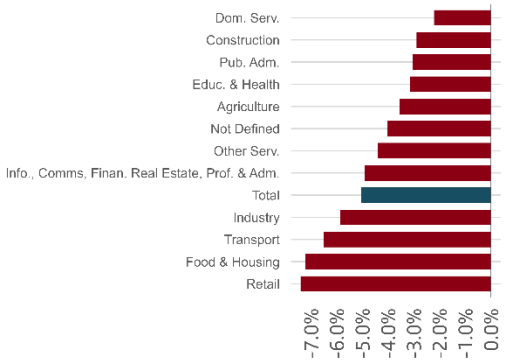

- **Brazil's proposed 44h→40h workweek reform creates a sizeable first-order macro shock.** Using PNADC microdata and a Cobb-Douglas framework, we estimate a mechanical reduction of ~5.1% in total hours worked, equivalent to a ~2.5% cumulative GDP drag before potential offsets.
- **The mechanical estimate is best seen as an upper-bound loss, not our central case.** International evidence suggests that firms typically adjust through productivity gains, scheduling changes, overtime persistence, informality and, in some cases, capital deepening.
- **GDP neutrality is plausible, but not automatic.** In our simulations, the reform becomes broadly neutral with 1.5–2.0% cumulative TFP gains if 20–30% of excess hours are recovered through avoidance channels such as MEI conversion, informal overtime or secondary jobs.


**Figure 1:** Simulated mechanical impact on total hour volume (% of worked hours reduced if capped at thresholds)




Source: BCB, Santander.

**Figure 2:** Mechanical impact on total hour volume by sector (cumulative, 44h → 40h, assuming 2025 average as baseline)




Source: BCB, Santander.

## Introduction

Brazil is on the verge of a new labour-market reform, focused on reducing the constitutional weekly hours cap from 44 to 40 hours, with no salary cuts and a guaranteed minimum of two rest days per week (the 5x2 schedule, replacing the 6x1 one).

The current proposal has a two-stage transition period: (i) an initial reduction in the cap from 44 to 42 weekly hours following its approval; and (ii) 12 months later, the cap falls from 42 to 40 weekly hours. This phased approach mirrors the gradual reforms adopted by Chile (2024–2028) and Mexico (2025–2030).

This report quantifies the potential macroeconomic impact on Brazilian GDP. We employ the simplest credible framework — a Cobb-Douglas production function with working hours as the variable labour input — and then

layer on two opposing behavioural forces: productivity gains (which soften the negative impact) and 'avoiders' (which reduce the effective size of the shock by partially circumventing the new caps through informality, overtime persistence, or conversion to *Microempreendedores Individuais* (MEI) status). Our simulation uses microdata from Brazil's Continuous National Household Survey (PNADC/IBGE), averaged over the four quarters of 2025. We highlight that our analysis focuses solely on the implications of reducing weekly working hours. We cannot credibly quantify the additional restriction associated with the week schedule (5x2 vs 6x1) due to lack of available data.

**Figure 3:** The Reform at a Glance

| Stage | Timing | New Cap |
|---|---|---|
| Stage 1 | T+60 days after promulgation | 42h / week |
| Stage 2 | T+12 months after Stage 1 | 40h / week |

Sources: Santander.

## Analytical Framework and Assumptions

### The Production Function

We model output using a Cobb-Douglas production function of the form:

$$Y_t = A_t H_t^{\alpha}$$

where $Y_t$ is real GDP, $A_t$ is total factor productivity (TFP), $H_t$ is the aggregate volume of hours worked (workers × hours per worker), and $\alpha$ is the labour share in output. All other factors of production — capital, land, raw materials — are held constant across scenarios.

This gives the percentage change in GDP:

$$\frac{\Delta Y}{Y} = \left(1 + \frac{\Delta A}{A}\right)\left(1 + \frac{\Delta H}{H}\right)^{\alpha} - 1$$

### Key Assumption: Labour Share α = 0.5

We set $\alpha$ = 0.5. This value is broadly consistent with the labour income share estimated for Brazil in the macro-labour literature and with typical values used in calibrations of developing economies. A higher $\alpha$ would amplify the negative shock; a lower $\alpha$ would dampen it. We treat α = 0.5 as our central case and note that the qualitative conclusions are robust across a range of plausible values (0.4–0.6).

### Measuring the Hour Shock

The mechanical (first-order) impact on aggregate hours is simulated directly from PNADC microdata. For each formal worker currently reporting more than the new cap (42h in Stage 1; 40h in Stage 2), we compute the excess hours that must be shed. Informal workers are assumed not to be directly bound by the cap in our baseline — their hours are not mechanically truncated. In addition, formal workers outside the scope of the policy are also excluded. These include self-employed workers and individuals classified as employers, meaning those

who operate their own business or activity and hire at least one employee. **Stage 1 shock:** $\Delta H^1$ = −(total excess hours above 42h/week for formal workers) / (total hour volume for all workers)

**Stage 2 shock:** $\Delta H^2$= −(additional excess hours between 40h/week and 42h/week for formal workers) / (total hour volume at Stage 1 cap)

Cumulative shock: $\Delta H^{Total} = (1 + \Delta H^1)(1 + \Delta H^2) - 1$

**Introducing Avoiders**

We recognise that a cap on formal hours does not automatically translate into a proportional reduction in hours actually worked. Some workers or employers will circumvent the new limit — a phenomenon we call 'avoiders'. Avoidance channels include:

- Higher informality: formal workers converting to informal arrangements (e.g., freelance, off-the-books work) to continue working above the cap.
- MEI conversion: employers encouraging workers to register as *Microempreendedores Individuais* (MEI), removing them from the *Consolidação das Leis do Trabalho* (CLT) framework.
- Extra-legal overtime: payment of unofficial overtime, particularly in sectors with weak labour inspection.
- Increased secondary jobs: workers adding part-time roles to compensate for lost hours at their primary employer.

We parameterise avoidance with a single parameter, the avoider share ($\sigma$), defined as the fraction of the mechanical excess hours that is effectively 'recovered' through these channels. When $\sigma$ = 0, the shock is fully realised; when $\sigma$ = 1, no hours are actually lost. The effective hour change becomes:

$$\Delta H^{eff} = -(1 - \sigma)\left(\frac{excess\ hours}{total\ hours}\right)$$

Avoiders carry a secondary implication: any hours recovered through informal channels reduce the share of formal employment, implying a possible rise in the informality rate. Avoidance does not necessarily translate into informality, but it is a possible channel. We track this implied formality change alongside the GDP impact.

**Productivity Gains**

Reduced working hours need not imply proportional output losses. A growing body of evidence — from France's 35-hour week to recent corporate pilots in Iceland, Japan, and the United Kingdom — documents efficiency gains that partly offset the hour reduction. Potential sources include:

- **Worker efficiency**: better-rested employees deliver higher output per hour (the 'recuperation' effect).
- **Human capital accumulation**: additional leisure time allows investment in education and skills formation, raising long-run productivity.
- **Worker selection**: when employers must shed hours (and potentially headcount), they may retain only the most productive workers, raising average output per hour.
- **Capital deepening**: facing higher effective labour costs, firms invest in automation and machinery, raising capital intensity and TFP.
- **Reduced absenteeism and turnover**: healthier, less fatigued workers take fewer sick days and stay longer, cutting hiring and training costs.

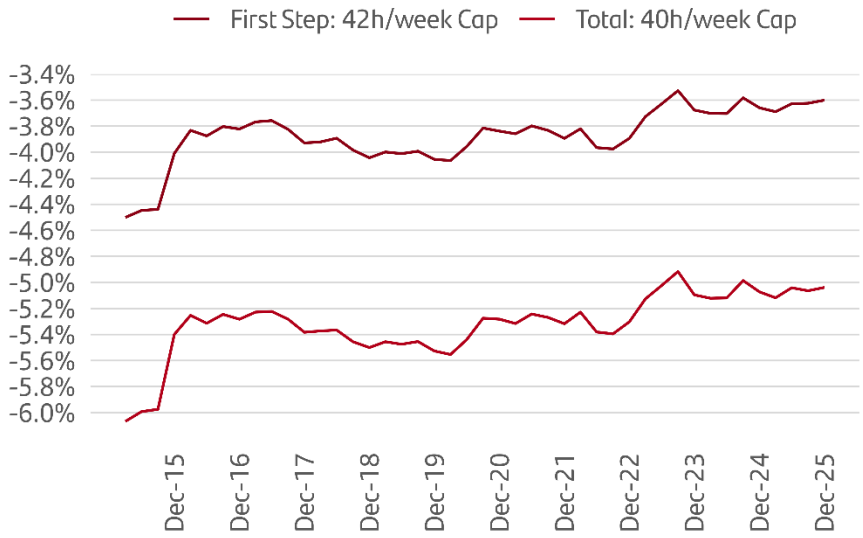
We model productivity gains as a proportional uplift to TFP (parameter τ, expressed as a fraction). The full GDP impact then becomes:

$$\text{GDP Impact} = (1+\tau)\left(1+\Delta H^{eff}\right)^{\alpha} - 1$$

## The Mechanical Hour Shock

Before any behavioural response, the reform mechanically reduces the total volume of hours worked in Brazil's formal sector. Figure 4 shows how this aggregate shock has evolved historically since 2015, as the working-hours distribution shifted over time.

**Figure 4:** Simulated mechanical impact on total hour volume (% of worked hours reduced if capped at thresholds)




Sources: BCB, Santander.

Two observations stand out. First, the cumulative shock (44h to 40h) has been remarkably stable at around −5% since 2016, with the 2015 reading (−6%) reflecting a higher concentration of long-hours workers that declined rapidly following the economic recession. Second, the Stage 1 shock (44h to 42h) alone accounts for approximately −3.7% to −4% of total hours, meaning that slightly more than three-quarters of the total adjustment occurs in the first phase.

**Baseline Hour Shock for 2025**

Using the 2025 average PNADC data, our central estimates for the mechanical hour shock (no avoiders, no productivity offset) are:

**Figure 5:** Effects of the Weekly Hour Cap on Worked Hours (assuming 2025 average as baseline)

| | |
|---|---|
| Stage 1: 44h → 42h (Year 1) | **−3.7% of total hour volume** |
| Stage 2: 42h → 40h (Year 2, incremental) | **−1.4% of total hour volume at Stage 1 cap** |
| Cumulative: 44h → 40h | **~−5.1% of total hour volume** |

Sources: IBGE, Santander.

**Implied Baseline GDP Impact (No Offsets)**

Applying the Cobb-Douglas formula with α = 0.5 and assuming no productivity gain and no avoidance (σ = 0, τ = 0), the mechanical GDP impacts are:

**Figure 6:** Effects of the Weekly Hour Cap on GDP (assuming 2025 average as baseline and α = 0.5, σ = 0, τ = 0)

| | |
|---|---|
| **Year 1 (44h → 42h)** | **−1.8%** |
| **Year 2 additional (42h → 40h)** | **−0.7%** |
| **Cumulative (44h → 40h)** | **−2.5%** |

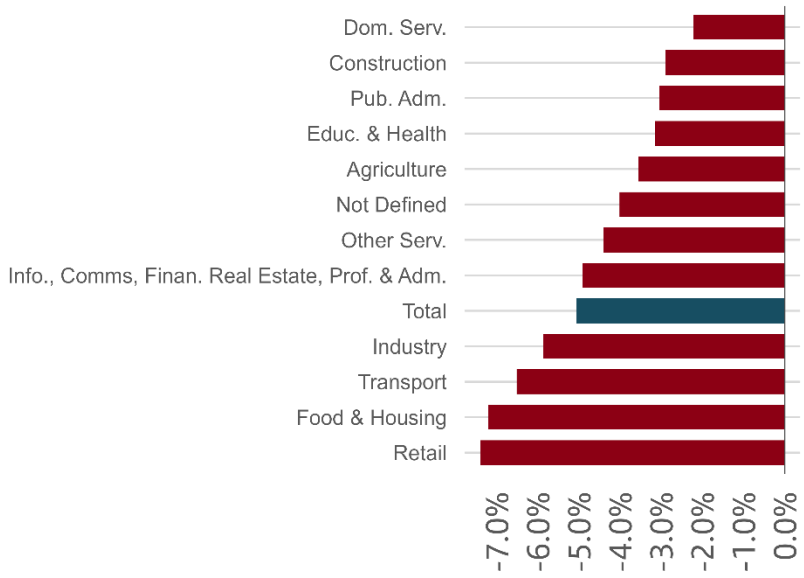
Sources: IBGE, Santander.

These are the upper-bound negative impacts — the worst-case scenario in which the reform is fully effective, no productivity gain materialises, and no worker or employer finds a way around the new limits. In practice, both offsets are likely to materialise to some degree. The remainder of this report systematically analyses how they alter the picture.

## Sectoral Exposure

The reform does not affect all sectors equally. Exposure depends on how many formal workers in each sector currently report hours above the new cap, and what share of that sector's total hour volume those excess hours represent. Figure 7 ranks sectors by their cumulative mechanical hour shock (44h → 40h).

**Figure 7:** Mechanical impact on total hour volume by sector (cumulative, 44h → 40h, assuming 2025 average as baseline)




Sources: IBGE, Santander.

**Most Exposed Sectors**

Retail, Accommodation & Food Services, and Transport & Storage are the three most exposed sectors, each seeing mechanical hour reductions in the range of −6% to −7% of their total hour volume. This reflects the high concentration of formal workers at or above the 44-hour threshold — the classic service sectors running on 6x1 schedules.

Industry is also highly exposed (approximately −6%), driven by manufacturing workers on continuous shift schedules. The Information, Communications, Finance and Professional Services cluster follows at around −4.5%, partly buffered by the high share of already-compliant 40-hour formal contracts in financial services.

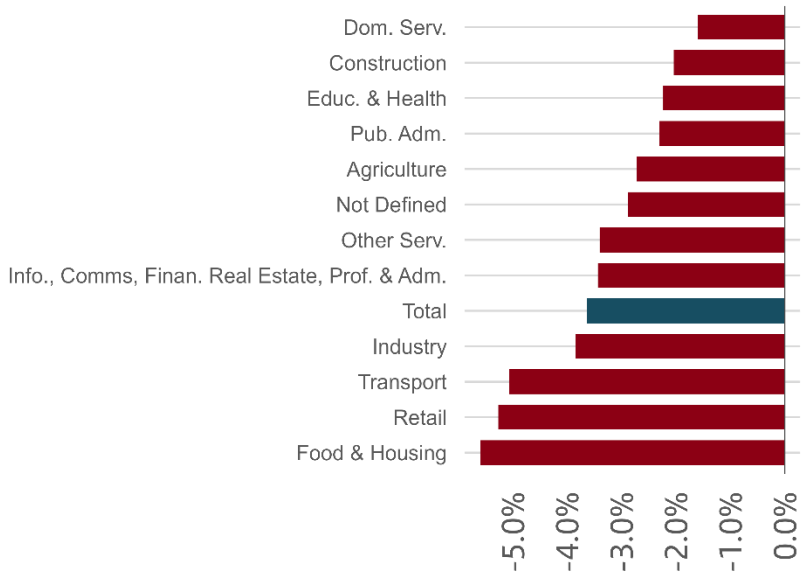
**Least Exposed Sectors**

At the other end of the spectrum, Domestic Services, Construction, Public Administration, and Education & Health show shocks below −2%. Public Administration is largely already on 40-hour or shorter contracts. Domestic Services, despite high informality, has fewer formal workers pushing hard against the 44-hour ceiling. Education and Health also benefit from a concentration of already-compliant 40-hour formal arrangements, particularly for teachers and nurses.

**Stage 1 vs. Cumulative**

Figure 8 shows the Stage 1 shock in isolation (44h → 42h). The ranking is broadly preserved, confirming that the most exposed sectors in Year 1 are also those most affected in Year 2. Retail and Food & Housing remain at the top of the distribution, while Public Administration, Domestic Services, Construction, and Education and Health stay at the lower bounds.

**Figure 8:** Mechanical impact of Stage 1 on total hour volume by sector (Stage 1, 44h/w → 42h/w, assuming 2025 average as baseline)




Sources: IBGE, Santander.

## The Two Offsetting Forces

**Productivity Gains: Channels and Evidence**

Brazil's 1988 experience is useful, but it should not be read as a one-for-one precedent. The reduction of the constitutional workweek from 48 to 44 hours did not trigger the economic collapse feared by critics, but it occurred alongside broader changes in Brazil's economic institutions and competitive environment. The relevant lesson is therefore narrower: statutory hour reductions do not translate mechanically into equivalent GDP losses, because firms and workers adjust through productivity, bargaining, scheduling, informality and investment.

International evidence points in the same direction. Shorter working hours can generate modest gains in output per hour worked, especially when firms actively reorganise work rather than simply absorb the cost:

- France's 35-hour reform is the main large-economy precedent. Studies find evidence of higher hourly productivity in firms that reduced hours, although the total output and employment effects remain debated because the reform was accompanied by payroll-tax cuts, wage moderation and bargaining flexibility.
- Broader European evidence is more nuanced. Cross-country studies suggest that reductions in hours did not automatically create additional employment, but they also did not produce output losses proportional to the fall in hours, implying some productivity or organisational offset.
- Iceland's shorter-week trials found that productivity was maintained or improved in most participating workplaces, with no deterioration in service quality.
- The UK four-day-week pilot reported broadly stable or improving revenues among participating firms, alongside lower absenteeism and turnover, although the self-selected nature of the trial limits extrapolation.

- Japan / Microsoft Japan provides an extreme micro example: output per employee rose sharply during a short four-day-week experiment, illustrating the potential upside from eliminating low-value work time.

For Brazil, the realistic productivity gain from a 44-to-40-hour reduction is likely to be far more modest than the headline figures from voluntary four-day-week pilots. Brazil starts from a 44-hour baseline and faces structural productivity constraints. Still, the international evidence argues against assuming a full mechanical output loss. We therefore model productivity gains, $\tau$, from 0% to 3% in aggregate.

**Avoiders: Channels and Implications**

'Avoider' behaviour is arguably the most uncertain and Brazil-specific element of our analysis. Brazil's informal economy is large and structurally entrenched. The share of informal workers has declined from about 45% in the early 2010s to ~37% as of 2025 but remains far above OECD norms.

The avoidance mechanisms we model include:

- Informality expansion: Formal workers converting to informal arrangements (the PNADC category of workers without a CLT contract). Our assessment measures this as the implied rise in the informality rate, which appears on the secondary y-axis of the heatmaps.
- MEI proliferation: Employers encouraging workers to register as MEI, also removing them from the CLT regime. Brazil already has over 15 million MEIs; this channel could expand further. Importantly, an MEI is self-employed and not subject to CLT hour limits.
- Persistent overtime: In sectors with weak labour inspection — retail, construction, food services — employers may simply continue paying informal overtime, with workers accepting it given wage pressures.
- Multiple employment: Workers may add a second part-time job (the PNADC documents a significant share of multi-job holders) to compensate for lost primary-job hours. This does not reduce total hours worked but redistributes them across the formal and informal divide.

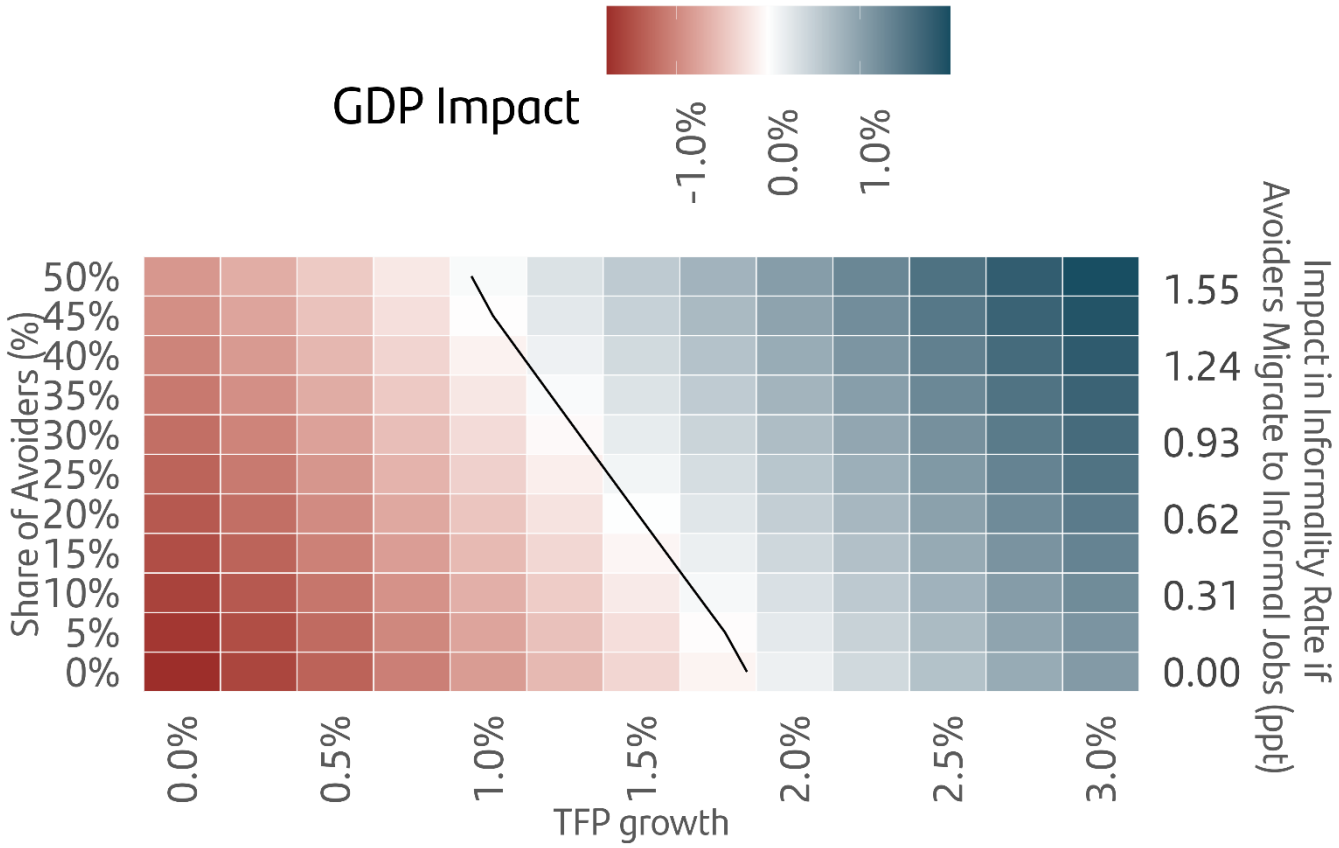
We model $\sigma$ (avoider share) from 0% to 50% in our heatmaps. The upper end of this range (50%) is deliberately conservative relative to a full 0–100% range, as it focuses on the regime where a non-trivial but not overwhelming share of excess hours leak back through informal channels. At $\sigma$ = 50%, approximately 2.2 percentage points of formality are lost — a meaningful but not catastrophic deterioration given the country's standards.

## Neutrality Analysis — Where Does GDP Impact Go to Zero?

The central analytical question for investors and policymakers is: at what combination of productivity gain and avoidance does the GDP impact become negligible (or zero)? Our heatmaps answer this directly. In each chart, the colour scale runs from dark red (significant negative GDP impact) through white (zero impact) to blue (positive GDP impact). The black line marks the exact neutrality frontier where the GDP impact equals zero.

**Stage 1: 44h → 42h (Year 1)**

**Figure 9:** GDP Sensibility to Stage 1 (44h/w → 42h/w, assuming 2025 average as baseline, α = 0.5)




Sources: IBGE, Santander.

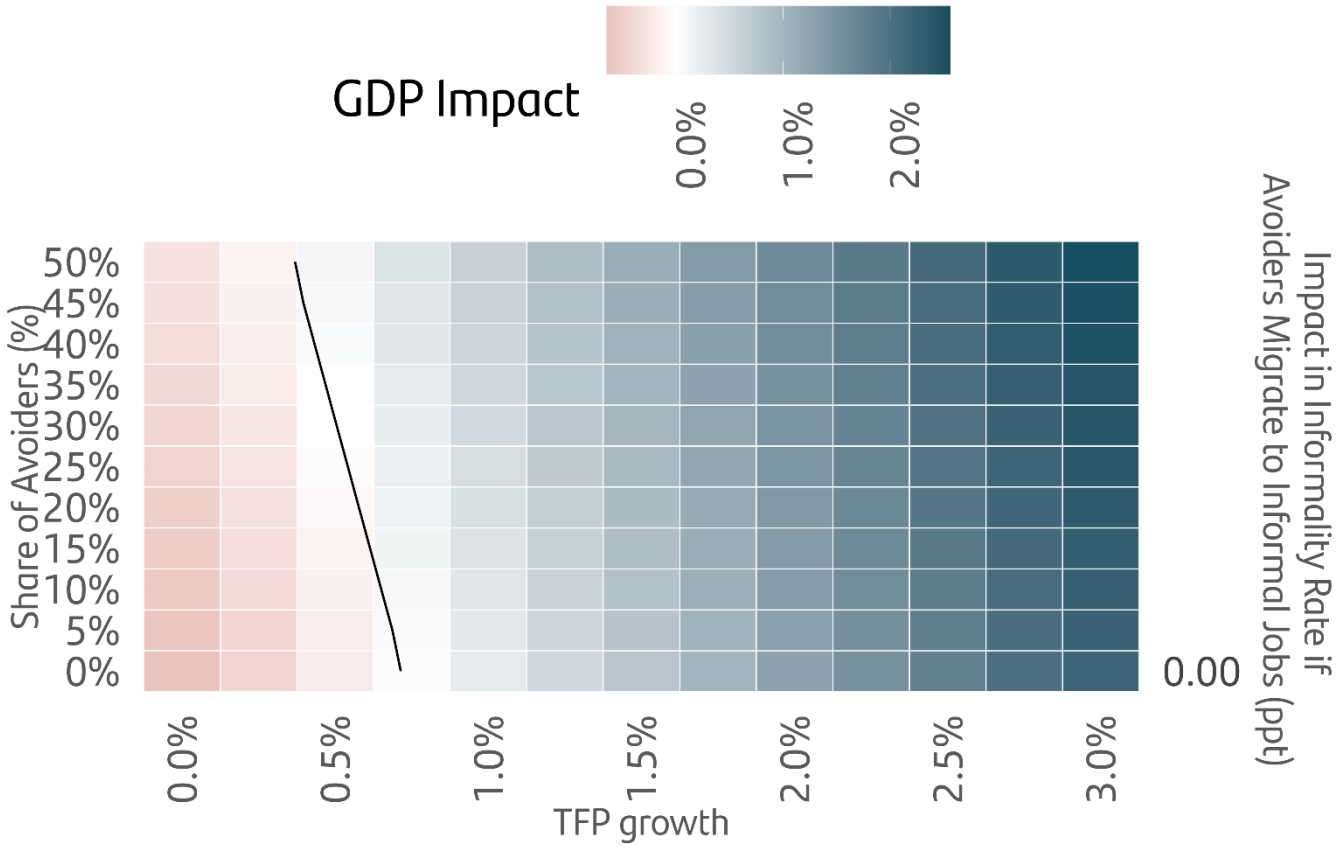
The Stage 1 heatmap (Figure 9) shows that GDP neutrality in Year 1 requires:

- ~2.2% TFP gain in the absence of any avoidance (σ = 0);
- ~1.4% TFP gain if 25% of excess hours are recovered through informal channels;
- ~1.0% TFP gain with 50% avoidance.

The neutrality frontier runs steeply from the upper-left to the lower-right: without meaningful productivity gains, even very high avoidance leaves a negative GDP mark. Conversely, a notable productivity gain of ~2.5–3.0% in Year 1 delivers a net positive GDP impact even without any avoidance.

**Stage 2: 42h → 40h (Year 2, Incremental)**

**Figure 10:** GDP Sensibility to Stage 2 (42h/w → 40h/w, assuming 2025 average as baseline, α = 0.5)




Sources: IBGE, Santander.

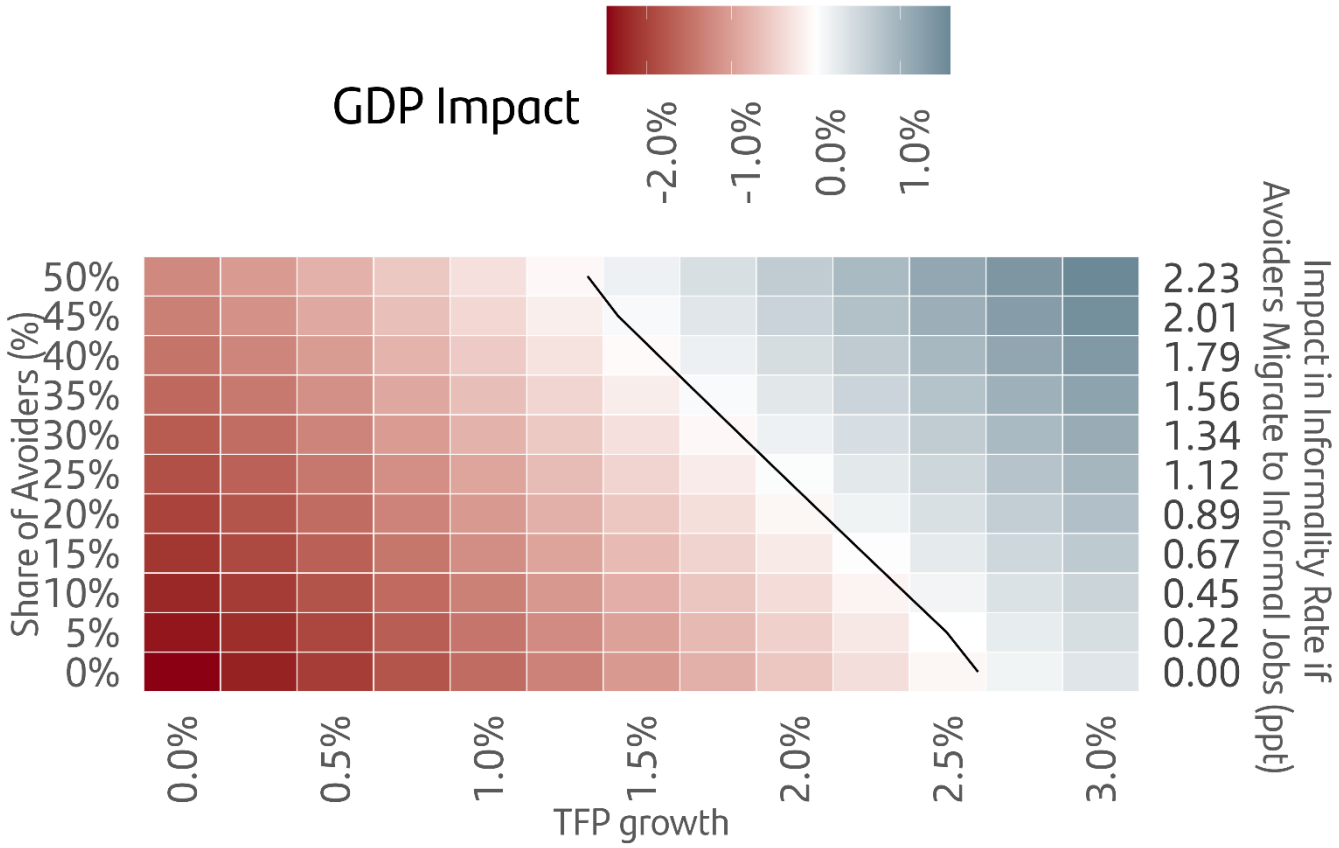
The Stage 2 heatmap (Figure 10) reveals an important asymmetry: because the incremental Stage 2 shock is smaller (approximately −1.4% of hours, versus −3.7% in Stage 1), the neutrality threshold is correspondingly lower. GDP becomes neutral with:

- ~0.7% TFP gain and zero avoidance;
- ~0.5% TFP gain with 20-25% avoidance;
- ~0.4% TFP gain with 50% avoidance.

This means the second year of the reform is substantially easier to 'absorb' in productivity terms. If firms have had 12 months to reorganise operations, invest in automation, and implement flexible-work arrangements, a 0.9% efficiency gain is well within reach. The Stage 2 neutrality frontier is notably steeper, meaning that even modest avoidance substantially reduces the productivity threshold.

**Cumulative Effect: 44h → 40h**

**Figure 11:** GDP Sensibility to Cumulative Change (44h/w → 40h/w, assuming 2025 average as baseline, α = 0.5)




Sources: IBGE, Santander.

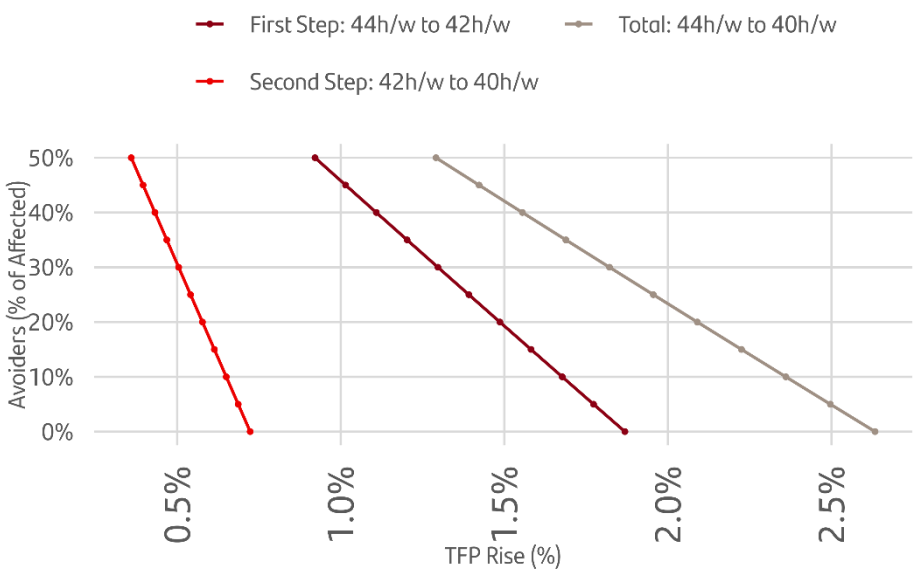
The aggregate heatmap (Figure 11) — the full two-year reform from 44 to 40 hours — presents the complete picture. Neutrality requires:

- ~2.5% cumulative TFP gain with zero avoidance;
- ~2.0% TFP gain with 25% avoidance;
- ~1.3% TFP gain with 50% avoidance.

A 2.5% aggregate TFP gain over two years is ambitious — it implies annual productivity growth roughly 1.2 percentage points above Brazil's recent trend. However, the combination of even modest productivity gains with plausible avoidance behaviour (15–25%) brings neutrality down to a TFP gain of 1.5–2.0%, which is achievable if the reform prompts meaningful firm-level adjustment. The lower-left region of Figure 11 — where both TFP gain and avoidance are low — remains deeply red, confirming that in a scenario where neither force materialises, the GDP cost is real and substantial (~−2% to −3%).

**The Neutrality Frontier Line**

**Figure 12:** Minimum avoidance required for GDP neutrality, as a function of TFP gain (assuming 2025 average as baseline, α = 0.5)




Sources: IBGE, Santander.

Figure 12 summarises all three neutrality frontiers on a single chart. Several features are noteworthy:

- All three curves are downward-sloping, reflecting the substitutability between productivity gains and avoidance as mechanisms that neutralise the GDP cost.
- The Stage 2 curve lies well below the Stage 1 curve at all avoider levels, reflecting the smaller incremental shock in Year 2.
- At 50% avoidance, the TFP requirement for full neutrality falls to approximately 0.9% for Stage 1, 0.3% for Stage 2, and 1.2% in aggregate — thresholds that approach the plausible range of organic productivity improvement.

## International Experiences

Brazil's reform does not happen in a vacuum. Over the past three decades, a wide range of economies — from France and Germany to South Korea, Iceland, Chile and Mexico — have legislated or piloted reductions in statutory working hours. The evidence is not uniform, but several lessons emerge clearly enough to inform expectations for Brazil.

**Figure 13:** Summary of major international working-hours reforms

| Country / case | Reform | Period | Evidence on GDP | Key findings and caveats |
|---|---|---|---|---|
| **France** | 39h → 35h statutory week | 2000–2002 | **Mixed / debated** | The 35-hour reform is the classic case, but its impact is hard to isolate because it came with payroll-tax cuts, wage moderation and firm-level flexibility. One macro study finds higher real GDP growth and lower unemployment after the reform, but other work stresses high fiscal cost and ambiguous firm-level effects. |
| **EU reforms: Belgium, France, Italy, Portugal, Slovenia** | Reductions in usual weekly hours | Late 1990s–2000s | **Mostly neutral on employment; GDP effect unclear** | A cross-country sector-level study finds that reforms reduced hours per worker but did **not** lead firms to substitute shorter hours with more workers; hourly wage and productivity effects were positive but statistically insignificant. This weakens the "work-sharing boosts activity" argument. |
| **Germany / IG Metall** | Sectoral reduction to 35h; later options for 28h | From 1980s; 2018 update | **Neutral to positive, but sector-specific** | Germany is not a national statutory benchmark. The lesson is coordinated bargaining in high-productivity industry, with working-time accounts, flexibility and wage discipline. The 2018 IG Metall deal allowed temporary 28-hour weeks for care responsibilities, but this is mainly a flexibility model, not a macro GDP experiment. |
| **Iceland** | Public-sector trials: 40h → 35–36h | 2015–2019 | **Positive at workplace level; macro inference limited** | Trials covering about 2,500 workers found productivity was maintained or improved in many workplaces and wellbeing rose substantially. However, this was not a clean national GDP shock; Iceland is a small economy and the evidence is strongest for productivity/wellbeing, not aggregate output. |
| **United Kingdom** | Four-day week pilot, no pay cut | 2022 | **Positive at firm level; selection bias** | The UK pilot covered 61 firms and around 2,900 workers. Reported outcomes included stable or higher revenues, lower turnover and improved wellbeing. But firms self-selected into the trial, so it is not strong evidence that a mandatory economy-wide reform would raise GDP. |
| **Japan / Microsoft Japan** | 4-day week company experiment | 2019 | **Positive, but only single-firm evidence** | Microsoft Japan reported a 40% increase in sales per employee during a one-month trial. Useful as a productivity case study, but not a basis for national GDP conclusions. |
| **Chile** | 45h → 40h statutory week | 2024–2028 | **Pending / uncertain** | Chile is one of the best Latin American comparators because the reduction is gradual: 44h in 2024, 42h in 2026 and 40h in 2028. Evidence on GDP, employment and informality is still ex-ante or early-stage. |
| **Colombia** | 48h → 42h statutory week | 2021–2026 | **Pending / uncertain** | Colombia is highly relevant for Brazil because it reduces hours gradually without wage cuts. The final move to 42h occurs in 2026, so robust ex-post evidence on GDP and productivity is still limited. |
| **Mexico** | 48h → 40h statutory week | 2027–2030 | **Pending / no ex-post evidence** | Mexico approved a gradual reduction to 40h by 2030. This is an important regional benchmark, but any GDP effect is prospective. The main lesson is transition design, not observed macro impact. |
| **Belgium** | 4-day compressed week | 2022 onward | **Not a true hours reduction** | Belgium allows workers to compress weekly hours into fewer days. This is relevant for flexibility and wellbeing, but should not be used as evidence for lower total hours or GDP effects. |

Sources: Santander.

### France: The Biggest Experiment — and Still the Most Ambiguous

France's Aubry laws remain the most ambitious national working-time reduction in a large advanced economy. The reform reduced the statutory workweek from 39 to 35 hours, first for larger firms and then for smaller firms, and was explicitly designed as both a welfare and employment-creation policy. The economic logic was

straightforward: if hours per worker were rationed, firms would either reorganise production more efficiently or hire additional staff.

The empirical record is mixed. A positive macroeconomic interpretation is offered by Du, Yin and Zhang (2013), who use counterfactual analysis and estimate that the 35-hour regulation reduced France's annual unemployment rate and raised real GDP over 2000–2007. However, this is not the consensus view. Estevão and Sá (2008), using the staggered implementation between large and small firms, find that aggregate employment was unaffected and that labour turnover increased, as firms shed workers who became more expensive. This makes France best classified as GDP-neutral to mildly positive in some macro estimates, but ambiguous overall.

The productivity evidence is more supportive but still nuanced. Crépon, Leclair and Roux (2004) use French firm-level data to compare firms that moved to the 35-hour week with firms that remained at 39 hours and find evidence consistent with employment and productivity gains among firms that reduced working time. However, the authors themselves emphasise the difficulty of constructing a clean comparison group, given that firms adopting the 35-hour week were not randomly selected.

The lesson for Brazil is direct but cautious. France is not proof that shorter hours automatically raise GDP. It is evidence that part of the hours shock can be offset through productivity, bargaining and fiscal support. The reform's apparent macro resilience relied partly on payroll-tax relief, wage moderation and flexibility arrangements. Without equivalent transition mechanisms, especially for SMEs, Brazil would face a higher probability of cost pass-through, informality, overtime avoidance or employment losses.

**Europe Beyond France: Mostly Neutral on Employment, Unclear on GDP**

A broader European reading is less supportive of the simple "work-sharing creates jobs" argument. Batut, Garnero and Tondini (2023) study working-time reductions in Belgium, France, Italy, Portugal and Slovenia using sector-level European data. They find that reforms reduced hours per employee, but firms did not systematically substitute shorter hours with more workers. In other words, lower hours did not mechanically translate into higher employment. Their estimates for hourly wages and value added per hour are positive but statistically insignificant, which points to a possible productivity offset rather than a clear GDP gain.

Portugal offers a useful firm-level caution. Asai, Lopes and Tondini (2024) study Portugal's 1996 reform, which reduced standard hours from 44 to 40. They find that affected firms significantly improved hourly labour productivity, with an estimated gain of about 4.4%, but also experienced adverse effects on employment and output. Importantly, firms that had already reduced working hours through collective agreements before the statutory reform were able to increase productivity without the same adverse employment and output effects.

This is important for Brazil because it weakens the strongest political claim often made in favour of shorter hours: that the same amount of work will simply be redistributed across more workers. The European evidence suggests that firms usually respond first through reorganisation, work intensification, scheduling changes, capital deepening and productivity improvements. Hiring is not automatic.

The implication is that Brazil's GDP effect should not be modelled as a simple mechanical loss of hours, but neither should it assume large job creation. The most defensible central assumption is a partial productivity offset, with employment gains likely to be concentrated in sectors where demand is stable, informality is low and firms can reorganise tasks efficiently.

**Germany: Negotiated Reduction, Not a National Shock**

Germany is often cited as evidence that shorter working hours can coexist with high productivity, but the institutional mechanism matters more than the headline number. The German experience was not a sudden national statutory reduction. It was a long, sector-by-sector process led by collective bargaining, particularly in metalworking and manufacturing. The 35-hour week emerged through negotiated settlements, working-time accounts, sectoral bargaining and firm-level flexibility, not through a uniform overnight mandate.

This makes Germany a neutral-to-positive activity case, but only under very specific institutional conditions. Germany's high GDP per hour worked reflects deep capital intensity, strong vocational systems, coordinated bargaining and firms' ability to reorganise production around higher hourly productivity.

The most relevant lesson for Brazil is not that "35 hours work." It is that working-time reduction works best when embedded in credible collective bargaining and linked to productivity-enhancing investment. Germany's experience supports gradualism, sectoral differentiation and negotiated flexibility. It does not support a one-size-fits-all statutory shock in a labour market with weaker inspection capacity and a much larger informal sector.

**South Korea: Statutory Caps Reduce Extreme Hours, But Compliance Is Uneven**

South Korea's 2018–2021 reform reduced the maximum legal workweek from 68 to 52 hours, consisting of 40 regular hours plus 12 overtime hours. The reform is useful for Brazil because it was not a four-day-week pilot in selected firms; it was a national statutory cap in an economy with a strong long-hours culture.

The evidence suggests a limited positive effect on hours reduction, but not a clean GDP or productivity story. The OECD's preliminary assessment Hijzen and Thewissen (2020), in the OECD's preliminary assessment, find that the 52-hour limit brought Korea's working-time regulation closer to the dominant OECD model and reduced the incidence of working more than 52 hours among overtime workers in large firms by around 5 percentage points, or roughly one-fifth of its pre-reform level. However, the same assessment stresses that very long hours remained common even among large firms covered by the new cap, and that around two in five workers would remain exempt from the 52-hour limit even after full implementation.

More recent causal evidence reinforces the same point. Carcillo, Hijzen and Thewissen (2023) use the stepwise implementation of the reform by firm size in a difference-in-differences framework and conclude that the 52-hour limit reduced, but "far from eliminated," the incidence of very long hours. Overall, the reform helped weaken Korea's long-hours culture, but statutory limits alone were insufficient to eradicate it.

For Brazil, South Korea is the anchor case for the "avoider" parameter. Statutory caps do bind, but not perfectly. In sectors with weak inspection, fragmented employment relationships or high SME concentration, the reform is likely to reduce reported hours more than actual hours. This cushions measured GDP losses but weakens formalisation and may shift adjustment into undeclared overtime, MEI conversion or informal work.

**Iceland: Strong Workplace Evidence, Weak Macro Extrapolation**

Iceland provides one of the most cited positive examples, but it should be treated as a workplace and public-sector experiment rather than a national GDP experiment. Between 2015 and 2019, Iceland ran two large reduced-working-week trials involving around 2,500 workers, more than 1% of the national workforce. The

trials tested reductions from 40 hours to around 35–36 hours with no reduction in pay. Haraldsson and Kellam (2021), in the joint Autonomy–Alda report, find that productivity and service provision were maintained or improved across the majority of participating workplaces, while worker wellbeing improved across indicators such as stress, burnout, health and work-life balance.

The activity classification should therefore be positive at workplace level, but not proven at macro level. Iceland's results show that output need not fall when working time is reduced, provided that organisations redesign processes, shorten meetings, reprioritise tasks and reduce low-value presenteeism. But the trial was concentrated in a small, high-trust economy with strong institutions and many public-sector workplaces.

For Brazil, the lesson is useful but bounded. Iceland proves the possibility of a productivity offset; it does not prove that such an offset will appear automatically in labour-intensive sectors, low-margin SMEs or activities requiring continuous coverage. The Brazilian equivalent would require active workflow redesign, not merely legal compliance.

**United Kingdom: Positive Pilot Results, But Selection Bias Is Material**

The UK's 2022 four-day-week pilot is the strongest recent corporate experiment. It involved 61 companies and around 2,900 workers over six months. The headline results were highly favourable: most companies maintained or improved performance, many reported improved revenue trends, sick days and turnover fell, and 56 of the 61 participating firms planned to continue the shorter week after the trial.

The correct classification is positive firm-level evidence, but not generalisable as national GDP evidence. The firms were self-selected, received preparation and coaching, and were likely more able than average to reorganise work. The pilot therefore tells us that shorter hours can work well in adaptable organisations, especially in services, technology, professional work and other sectors where output is not mechanically tied to hours on site.

For Brazil, the UK case supports an upside scenario: if firms use the reform to eliminate low-productivity time, reduce absenteeism and improve retention, the effective GDP loss can be much smaller than the mechanical hours reduction. But it should not be used to claim that all sectors can move to shorter hours without cost. Retail, logistics, food services, security and healthcare face very different coverage constraints.

**Japan: Useful as a Productivity Anecdote, Not as a Macro Benchmark**

Japan is often included because of the Microsoft Japan four-day-week experiment and the broader 2019 Work Style Reform. The Microsoft Japan case reported a large increase in sales per employee during a short one-month trial, making it a striking example of how meeting discipline and workflow redesign can raise measured productivity. However, it is a single-firm, short-duration experiment and should not be treated as evidence of national GDP effects.

Japan's broader policy is more relevant as a warning. The 2019 Work Style Reform focused heavily on overtime limits and work-style regulation rather than a full statutory reduction in standard weekly hours. Its macro classification should be marginal or uncertain, because the main objective was to reduce overwork and improve health, not to produce a measurable GDP gain.

For Brazil, Japan is best used as a micro-level illustration: productivity offsets are possible when firms redesign how work is done. But Japan should not carry weight in the macro modelling. It is neither a comparable statutory weekly-hours reduction nor a clean economy-wide experiment.

**Chile: The Best Current Latin American Comparator, But Evidence Is Still Early**

Chile is the most directly relevant Latin American comparator. Law 21,561 reduces the ordinary workweek from 45 to 40 hours gradually: 44 hours from 2024, 42 hours from 2026 and 40 hours from 2028. The law also allows some flexibility in the distribution of hours, including averaging mechanisms, which reduces operational disruption for firms.

The first reduction from 45 to 44 hours was too small to generate strong macro evidence. There is no robust ex-post GDP study yet, and the more informative stages — 42 hours and 40 hours — are still being implemented. Legal and employer guidance for the 2026 stage focuses on operational adaptation, shift redesign and time-tracking systems, which suggests that the reform is now entering the phase where firm-level costs become more visible.

For Brazil, Chile validates the importance of gradualism and flexibility, but not yet GDP neutrality. The Chilean case should be treated as a live benchmark. If the 2026 and 2028 stages occur without deterioration in employment, informality or service-sector margins, it will become the strongest regional evidence in favour of Brazil's proposal.

**Colombia: Relevant Design, Limited Evidence**

Colombia enacted Law 2101 of 2021, reducing the maximum weekly working time from 48 to 42 hours through a phased schedule. The reduction began after a transition period and reaches 42 hours in July 2026, with no reduction in workers' salaries or acquired rights.

The activity classification is pending / uncertain. Colombia is highly relevant because it shares several structural features with Brazil: informality, labour-intensive services, regional inequality and weaker enforcement capacity than advanced European economies. However, robust ex-post studies on GDP, productivity, informality and employment are not yet available, to the best of our knowledge. The reform is still reaching its final stage.

For Brazil, Colombia is useful mainly as a design comparator. It supports gradual implementation and gives firms time to adjust, but it does not yet provide strong evidence that the GDP effect will be positive or neutral. The Colombian case should be monitored for sector-specific outcomes, especially in commerce, construction, agriculture and services.

**Mexico: The Most Ambitious Regional Reform, But Still Prospective**

Mexico has approved a reform to reduce the statutory workweek from 48 to 40 hours, implemented gradually between 2027 and 2030. The reform preserves wages and benefits, introduces overtime-related adjustments and is expected to require changes to the Federal Labor Law and compliance systems.

The correct classification is pending / high-risk comparator. Mexico's reduction is much larger than Brazil's proposed move from 44 to 40 hours: an eight-hour reduction from a 48-hour base versus a four-hour reduction

from a 44-hour base. That makes Mexico more ambitious and potentially more disruptive, especially for SMEs and labour-intensive sectors.

For Brazil, Mexico is not yet evidence of impact; it is evidence of policy direction. The main lesson is political and design-related: the reform uses a long transition period to reduce the adjustment shock. If Mexico reaches 2030 without significant employment or informality deterioration, it will become a powerful regional precedent. Until then, it should be treated as a forward-looking benchmark rather than an empirical proof point.

**Belgium: Flexibility, Not a True Working-Time Reduction**

Belgium should be separated from the core evidence base. Its reform allows workers to compress their weekly hours into fewer days, but it does not necessarily reduce total weekly hours. It is therefore a flexibility reform, not a shorter-hours reform.

The activity classification is not comparable. Belgium may be useful for discussing worker preferences, scheduling autonomy and work-life balance, but it should not be used as evidence that reducing total hours has a positive, neutral or negative GDP effect. Including Belgium in the same category as France, Chile or Colombia risks overstating the evidence.

For Brazil, the Belgian case is still useful as a design reminder: flexibility over how hours are distributed can reduce the operational burden of reform. But it does not answer the central GDP question.

**Key Lessons for Brazil**

Across the international evidence, six lessons stand out.

**First, mechanical GDP-loss models are too pessimistic.** In most real-world cases, firms do not simply lose output in proportion to hours reduced. They reorganise tasks, reduce low-value time, intensify work, adjust schedules or use overtime. This means the effective output shock is usually smaller than the mechanical reduction in legal hours.

**Second, GDP gains are not automatic either.** The strongest evidence supports maintained output or higher hourly productivity in selected firms and sectors, not economy-wide GDP acceleration. The broader European evidence finds lower hours but no clear employment gain and only statistically weak productivity effects.

**Third, gradualism consistently improves feasibility.** France, Chile, Colombia and Mexico all rely on phased implementation or staged compliance. This matters for Brazil because a two-stage transition gives firms time to renegotiate shifts, invest in productivity and adjust hiring plans.

**Fourth, collective bargaining quality is decisive.** Germany and parts of France show that negotiated reductions work better when firms and workers share the adjustment through flexibility, wage moderation, productivity commitments or working-time accounts.

**Fifth, avoidance is part of the adjustment mechanism.** South Korea shows that statutory caps reduce long hours but do not eliminate them, especially in smaller firms. Brazil should expect some adjustment through informal overtime, MEI conversion, reclassification and uneven compliance.

**Sixth, Brazil's closest evidence is still incomplete.** Chile, Colombia and Mexico are the most relevant comparators institutionally and regionally, but their reforms are either recent or still being phased in. The evidence therefore supports a cautious central scenario: GDP neutrality is achievable, but only if productivity gains, flexibility and gradual implementation offset the higher effective hourly labour cost.

## Risks and Uncertainties

### Downside Risks to Our Assessment

- No productivity gain: If firms simply bear the cost without reorganising (particularly small and micro enterprises, which face higher adjustment costs), the GDP loss approaches the mechanical baseline of −1.8% in Year 1 and −2.5% cumulatively.
- Inflation pass-through: Higher unit labour costs may be passed on to consumers, particularly in services sectors with limited international competition. This would erode real wages and partially offset any demand-side benefits.
- Small business viability: Micro and small enterprises have limited capacity to reorganise or invest in productivity-enhancing technology. The mitigation mechanisms remain to be defined in complementary legislation.
- Implementation uncertainty: The reform depends on complementary legislation (particularly for collective bargaining provisions and sectoral adjustments) that may take time to materialise, creating transitional legal uncertainty.

### Upside Risks to Our Assessment

- Higher-than-modelled avoidance: Brazil's historically large informal sector may absorb more excess hours than our 0–50% range contemplates. If avoidance is widespread, the formal labour market improves little (workers continue long hours informally), while the fiscal benefits of formalisation fail to materialise.
- Strong productivity response: If the reform triggers a wave of investment in workplace automation and process improvement, productivity gains could well exceed our modelled range.
- Demand stimulus: The immediate effect of reducing hours without cutting salaries raises the effective hourly wage. If firms absorb the cost (rather than cutting jobs), workers' disposable income could rise, potentially generating a positive demand impulse — particularly in consumption-driven sectors.
- Lower absenteeism and turnover: The health and wellness benefits documented in international pilots could reduce sick leave costs substantially. Brazil's INSS data already shows healthcare costs related to occupational stress and fatigue growing rapidly.

### Model Limitations

Our framework is deliberately simple. Several important channels are excluded by design:

- **Capital-labour substitution dynamics are not modelled: in practice, firms facing higher labour costs will accelerate capital investment, with effects on output that our static Cobb-Douglas cannot capture.**

- General equilibrium effects — wage spillovers, price adjustments, shifts in sectoral composition — are absent.
- Heterogeneity within sectors is not modelled: the aggregate sectoral shocks mask large within-sector dispersion between large formal firms and small informal operators.
- The reform's effect on employment (as opposed to hours) is outside scope. If firms respond by shedding workers rather than reducing hours-per-worker, the distributional consequences would be qualitatively different from what our framework captures.
- **Time dynamics are collapsed: we treat the shocks as instantaneous, whereas the actual adjustment will unfold over quarters or years.**

## Concluding Remarks

Brazil's upcoming working-hours reform — reducing the constitutional cap from 44 to 42 hours in Year 1 and to 40 hours in Year 2 — has substantial implications for labour market organization, dynamics and production. In a simple but analytically coherent Cobb-Douglas framework, the mechanical GDP cost of the reform is approximately −1.8% in Year 1 and −2.5% cumulatively, before any behavioural response.

However, this mechanical calculation is almost certainly not the final word. Two powerful forces push in the opposite direction:

- **Productivity gains**, driven by better-rested workers, capital deepening, reduced turnover, and human capital accumulation, **could deliver 1–3% TFP uplift over the two-year transition**. Our heatmaps show that a 2–3% TFP gain, in isolation, is sufficient to neutralise the GDP cost of the full reform.
- **Avoider behaviour** — through informality expansion, MEI conversion, and off-the-books overtime — **reduces the effective size of the hour shock.** At 20–30% avoidance, the TFP threshold for GDP neutrality falls to approximately 1.5–2.0%.

In aggregate, our central view is that a scenario in which the GDP impact is close to zero — or even mildly positive — is economically plausible but not assured. It requires a combination of moderate productivity improvement (~1.5–2.5% cumulatively) and moderate avoidance (20–30% of excess hours informally recovered). Whether these conditions are met will depend heavily on complementary policies: investment tax incentives, labour inspection capacity, and the quality of collective bargaining agreements that fill in the sectoral details the Constitutional amendment leaves to labour law.

Sectorally, investors in Retail, Food & Housing, Transport, and Industry should model the largest first-order exposure. Public sector and Education & Health investors face minimal mechanical disruption. Across all sectors, the key variable to watch is the pace and quality of firm-level adaptation in the 12 months following Stage 1 promulgation — the period that will most determine whether the reform ends up as a net negative, neutral, or positive for aggregate output.

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