



## THEIR VIEW

# Capital deepening has weakened and our productivity has stalled

Mobilizing labour and capital isn't enough. India must make more efficient use of both for sustainably higher GDP growth



**SAUMITRA BHADURI**  
is professor, Madras School of Economics

India is at the threshold of one of the most promising economic decades in its modern history, yet the hard arithmetic underlying growth reflects a more fragile situation than our headline GDP figures suggest. Economists apply the Sala-i-Martin framework to break growth down into its core components and ask a simple-yet-powerful question: How much of the rise in output per worker can be attributed to the use of more capital (a single factor of production), and how much can be attributed to India becoming more productive on the whole? The results from India's growth decomposition between 1990 and 2023 reflect the emergence of a two-pronged challenge: capital deepening is now uneven and no longer accelerating, while total factor productivity (TFP) has remained stubbornly stagnant.

Trendlines demonstrate that India's capital deepening has followed an inverted-U path: it increased steadily through the 1990s and early 2000s, peaked around the mid-2000s, and then gradually declined—consistent with a slowdown in India's investment cycle after 2011. By contrast, TFP exhibits a shallow rise in the early reform years, a long plateau and then a noticeable downward bend after the mid-2010s; this indicates that productivity gains have not been continuous. Both curves reveal that neither capital deepening nor TFP is on an upward long-term trajectory, which reinforces the concern that India's growth engines are weakening rather than strengthening.

The long-run growth arithmetic shows that from 1990 to 2023, India's output per worker grew at a median rate of 4.71% per year. On paper, this is a strong performance. But the decomposition shows something critical: TFP contributes only 1.19 percentage points, while capital deepening contributes 1.91 percentage points; the residual part, which measures labour-quality shifts, structural changes and also measurement noise, adds less than 2 percentage points. These figures tell us that our economy remains driven predominantly by resource accumulation rather than productivity, a pattern characteristic of early-stage development but potentially inadequate for India to sustain 7–8% annual growth over the long run.

This is not an unusual outcome for a developing economy with a rapidly expanding labour force, since it implies that capital deepening is occurring at a rate that is higher than growth in output per worker. More workers are entering the market every year, which implies that the capital stock must grow faster simply to maintain the same ratio of capital per worker. But the worrying part is that this engine is now cooling. India's investment rate, once near 35% of GDP, now hovers around 30%. Bank credit to industry has grown only modestly, infrastructure investment faces execution gaps and private capital expenditure remains cautious.

These macro patterns reflect why the contribution of capital deepening has not translated into faster output-per-worker growth.

The second and more structural problem is our stagnant productivity growth. With a contribution of around 1.9 percentage points, our TFP is far too low for a country that aspires to high-middle-income status by 2047. Productivity improvements require not just factor accumulation but also deep institutional reforms: eliminating frictions in land and labour markets, improving contract enforcement, reducing logistics costs and radically improving human capital. India's TFP stagnation is visible in manufacturing, where output has grown but productivity hasn't accelerated meaningfully; and also in services, where traditional high-growth segments are maturing. The plateau is particularly concerning because the phenomenon of 'catch-up growth'—the ability to absorb and implement global technologies—should theoretically drive TFP up faster in a developing country.

Meanwhile, financial behaviour and capital allocation trends further complicate this picture. India's recent public-offer boom, with a record-breaking ₹1.8 trillion mobilized in 2024, reflects market enthusiasm but has not catalysed broad-based investment. A large part of these offers com-

prise offer-for-sale transactions, wherein the funds flow to existing shareholders instead of financing new production capacity. Investors are taking part in equity markets, but so far it has not become a driver of productive capital formation.

Gold imports, crossing 780 tonnes last year, tell another story. High household gold demand signals limited trust in financial instruments and continues to divert household savings away from productive capital. Every tonne of gold imported represents capital not invested in machinery, technology or infrastructure. In the growth-accounting framework, this matters: weaker domestic savings reduce the pool available for investment and ultimately makes capital deepening harder.

Yet, while India's situation is one of strategic urgency, it is not a sign of an impending slowdown. In fact, the unusual clarity provided by the decomposition of growth makes policy priorities unusually clear: To sustain 7–8% real GDP growth for another decade, we must both revive capital deepening and unlock TFP growth.

The first requires an investment renaissance. Easing India's remaining infrastructure bottlenecks, stabilizing policy signals for long-gestation industrial projects, accelerating insolvency resolution and enhancing state government execution capacity will help. India's infrastructure push has been a bright spot, but private investment must rejoin the cycle. Strategic public investment in green energy, semiconductor fabrication, advanced manufacturing and logistics corridors can crowd in private capital.

Unlocking TFP is harder but more essential. Judicial reforms, GST simplification, quality improvements in public education and greater competition in key markets—especially energy, logistics and digital commerce—can all raise productivity. Reducing logistics costs from 13–14% of GDP to global levels near 8% would alone shift India's TFP path. Human capital is equally critical: India's demographic dividend will turn into a burden if labour-force entrants lack the skills needed for a technologically evolving economy.

While India has accomplished remarkable growth through mobilization of labour and capital, the next stage of development requires something deeper: efficiency. What growth accounting data tells us is unambiguous: capital deepening is weakening and TFP is stagnant. Both challenges must be tackled head-on for India to achieve a sustainably higher growth path. The arithmetic is easy; execution is the real challenge.

These macro patterns reflect why the contribution of capital deepening has not translated into faster output-per-worker growth.

The second and more structural problem is our stagnant productivity growth. With a contribution of around 1.9 percentage points, our TFP is far too low for a country that aspires to high-middle-income status by 2047. Productivity improvements require not just factor accumulation but also deep institutional reforms: eliminating frictions in land and labour markets, improving contract enforcement, reducing logistics costs and radically improving human capital. India's TFP stagnation is visible in manufacturing, where output has grown but productivity hasn't accelerated meaningfully; and also in services, where traditional high-growth segments are maturing. The plateau is particularly concerning because the phenomenon of 'catch-up growth'—the ability to absorb and implement global technologies—should theoretically drive TFP up faster in a developing country.

Meanwhile, financial behaviour and capital allocation trends further complicate this picture. India's recent public-offer boom, with a record-breaking ₹1.8 trillion mobilized in 2024, reflects market enthusiasm but has not catalysed broad-based investment. A large part of these offers com-

prise offer-for-sale transactions, wherein the funds flow to existing shareholders instead of financing new production capacity. Investors are taking part in equity markets, but so far it has not become a driver of productive capital formation.

Gold imports, crossing 780 tonnes last year, tell another story. High household gold demand signals limited trust in financial instruments and continues to divert household savings away from productive capital. Every tonne of gold imported represents capital not invested in machinery, technology or infrastructure. In the growth-accounting framework, this matters: weaker domestic savings reduce the pool available for investment and ultimately makes capital deepening harder.

Yet, while India's situation is one of strategic urgency, it is not a sign of an impending slowdown. In fact, the unusual clarity provided by the decomposition of growth makes policy priorities unusually clear: To sustain 7–8% real GDP growth for another decade, we must both revive capital deepening and unlock TFP growth.

The first requires an investment renaissance. Easing India's remaining infrastructure bottlenecks, stabilizing policy signals for long-gestation industrial projects, accelerating insolvency resolution and enhancing state government execution capacity will help. India's infrastructure push has been a bright spot, but private investment must rejoin the cycle. Strategic public investment in green energy, semiconductor fabrication, advanced manufacturing and logistics corridors can crowd in private capital.

Unlocking TFP is harder but more essential. Judicial reforms, GST simplification, quality improvements in public education and greater competition in key markets—especially energy, logistics and digital commerce—can all raise productivity. Reducing logistics costs from 13–14% of GDP to global levels near 8% would alone shift India's TFP path. Human capital is equally critical: India's demographic dividend will turn into a burden if labour-force entrants lack the skills needed for a technologically evolving economy.

While India has accomplished remarkable growth through mobilization of labour and capital, the next stage of development requires something deeper: efficiency. What growth accounting data tells us is unambiguous: capital deepening is weakening and TFP is stagnant. Both challenges must be tackled head-on for India to achieve a sustainably higher growth path. The arithmetic is easy; execution is the real challenge.

These macro patterns reflect why the contribution of capital deepening has not translated into faster output-per-worker growth.

The second and more structural problem is our stagnant productivity growth. With a contribution of around 1.9 percentage points, our TFP is far too low for a country that aspires to high-middle-income status by 2047. Productivity improvements require not just factor accumulation but also deep institutional reforms: eliminating frictions in land and labour markets, improving contract enforcement, reducing logistics costs and radically improving human capital. India's TFP stagnation is visible in manufacturing, where output has grown but productivity hasn't accelerated meaningfully; and also in services, where traditional high-growth segments are maturing. The plateau is particularly concerning because the phenomenon of 'catch-up growth'—the ability to absorb and implement global technologies—should theoretically drive TFP up faster in a developing country.

Meanwhile, financial behaviour and capital allocation trends further complicate this picture. India's recent public-offer boom, with a record-breaking ₹1.8 trillion mobilized in 2024, reflects market enthusiasm but has not catalysed broad-based investment. A large part of these offers com-

prise offer-for-sale transactions, wherein the funds flow to existing shareholders instead of financing new production capacity. Investors are taking part in equity markets, but so far it has not become a driver of productive capital formation.

Gold imports, crossing 780 tonnes last year, tell another story. High household gold demand signals limited trust in financial instruments and continues to divert household savings away from productive capital. Every tonne of gold imported represents capital not invested in machinery, technology or infrastructure. In the growth-accounting framework, this matters: weaker domestic savings reduce the pool available for investment and ultimately makes capital deepening harder.

Yet, while India's situation is one of strategic urgency, it is not a sign of an impending slowdown. In fact, the unusual clarity provided by the decomposition of growth makes policy priorities unusually clear: To sustain 7–8% real GDP growth for another decade, we must both revive capital deepening and unlock TFP growth.

The first requires an investment renaissance. Easing India's remaining infrastructure bottlenecks, stabilizing policy signals for long-gestation industrial projects, accelerating insolvency resolution and enhancing state government execution capacity will help. India's infrastructure push has been a bright spot, but private investment must rejoin the cycle. Strategic public investment in green energy, semiconductor fabrication, advanced manufacturing and logistics corridors can crowd in private capital.

Unlocking TFP is harder but more essential. Judicial reforms, GST simplification, quality improvements in public education and greater competition in key markets—especially energy, logistics and digital commerce—can all raise productivity. Reducing logistics costs from 13–14% of GDP to global levels near 8% would alone shift India's TFP path. Human capital is equally critical: India's demographic dividend will turn into a burden if labour-force entrants lack the skills needed for a technologically evolving economy.

While India has accomplished remarkable growth through mobilization of labour and capital, the next stage of development requires something deeper: efficiency. What growth accounting data tells us is unambiguous: capital deepening is weakening and TFP is stagnant. Both challenges must be tackled head-on for India to achieve a sustainably higher growth path. The arithmetic is easy; execution is the real challenge.

These macro patterns reflect why the contribution of capital deepening has not translated into faster output-per-worker growth.

The second and more structural problem is our stagnant productivity growth. With a contribution of around 1.9 percentage points, our TFP is far too low for a country that aspires to high-middle-income status by 2047. Productivity improvements require not just factor accumulation but also deep institutional reforms: eliminating frictions in land and labour markets, improving contract enforcement, reducing logistics costs and radically improving human capital. India's TFP stagnation is visible in manufacturing, where output has grown but productivity hasn't accelerated meaningfully; and also in services, where traditional high-growth segments are maturing. The plateau is particularly concerning because the phenomenon of 'catch-up growth'—the ability to absorb and implement global technologies—should theoretically drive TFP up faster in a developing country.

Meanwhile, financial behaviour and capital allocation trends further complicate this picture. India's recent public-offer boom, with a record-breaking ₹1.8 trillion mobilized in 2024, reflects market enthusiasm but has not catalysed broad-based investment. A large part of these offers com-

prise offer-for-sale transactions, wherein the funds flow to existing shareholders instead of financing new production capacity. Investors are taking part in equity markets, but so far it has not become a driver of productive capital formation.

Gold imports, crossing 780 tonnes last year, tell another story. High household gold demand signals limited trust in financial instruments and continues to divert household savings away from productive capital. Every tonne of gold imported represents capital not invested in machinery, technology or infrastructure. In the growth-accounting framework, this matters: weaker domestic savings reduce the pool available for investment and ultimately makes capital deepening harder.

Yet, while India's situation is one of strategic urgency, it is not a sign of an impending slowdown. In fact, the unusual clarity provided by the decomposition of growth makes policy priorities unusually clear: To sustain 7–8% real GDP growth for another decade, we must both revive capital deepening and unlock TFP growth.

The first requires an investment renaissance. Easing India's remaining infrastructure bottlenecks, stabilizing policy signals for long-gestation industrial projects, accelerating insolvency resolution and enhancing state government execution capacity will help. India's infrastructure push has been a bright spot, but private investment must rejoin the cycle. Strategic public investment in green energy, semiconductor fabrication, advanced manufacturing and logistics corridors can crowd in private capital.

Unlocking TFP is harder but more essential. Judicial reforms, GST simplification, quality improvements in public education and greater competition in key markets—especially energy, logistics and digital commerce—can all raise productivity. Reducing logistics costs from 13–14% of GDP to global levels near 8% would alone shift India's TFP path. Human capital is equally critical: India's demographic dividend will turn into a burden if labour-force entrants lack the skills needed for a technologically evolving economy.

While India has accomplished remarkable growth through mobilization of labour and capital, the next stage of development requires something deeper: efficiency. What growth accounting data tells us is unambiguous: capital deepening is weakening and TFP is stagnant. Both challenges must be tackled head-on for India to achieve a sustainably higher growth path. The arithmetic is easy; execution is the real challenge.

These macro patterns reflect why the contribution of capital deepening has not translated into faster output-per-worker growth.

The second and more structural problem is our stagnant productivity growth. With a contribution of around 1.9 percentage points, our TFP is far too low for a country that aspires to high-middle-income status by 2047. Productivity improvements require not just factor accumulation but also deep institutional reforms: eliminating frictions in land and labour markets, improving contract enforcement, reducing logistics costs and radically improving human capital. India's TFP stagnation is visible in manufacturing, where output has grown but productivity hasn't accelerated meaningfully; and also in services, where traditional high-growth segments are maturing. The plateau is particularly concerning because the phenomenon of 'catch-up growth'—the ability to absorb and implement global technologies—should theoretically drive TFP up faster in a developing country.

Meanwhile, financial behaviour and capital allocation trends further complicate this picture. India's recent public-offer boom, with a record-breaking ₹1.8 trillion mobilized in 2024, reflects market enthusiasm but has not catalysed broad-based investment. A large part of these offers com-

prise offer-for-sale transactions, wherein the funds flow to existing shareholders instead of financing new production capacity. Investors are taking part in equity markets, but so far it has not become a driver of productive capital formation.

Gold imports, crossing 780 tonnes last year, tell another story. High household gold demand signals limited trust in financial instruments and continues to divert household savings away from productive capital. Every tonne of gold imported represents capital not invested in machinery, technology or infrastructure. In the growth-accounting framework, this matters: weaker domestic savings reduce the pool available for investment and ultimately makes capital deepening harder.

Yet, while India's situation is one of strategic urgency, it is not a sign of an impending slowdown. In fact, the unusual clarity provided by the decomposition of growth makes policy priorities unusually clear: To sustain 7–8% real GDP growth for another decade, we must both revive capital deepening and unlock TFP growth.

The first requires an investment renaissance. Easing India's remaining infrastructure bottlenecks, stabilizing policy signals for long-gestation industrial projects, accelerating insolvency resolution and enhancing state government execution capacity will help. India's infrastructure push has been a bright spot, but private investment must rejoin the cycle. Strategic public investment in green energy, semiconductor fabrication, advanced manufacturing and logistics corridors can crowd in private capital.

Unlocking TFP is harder but more essential. Judicial reforms, GST simplification, quality improvements in public education and greater competition in key markets—especially energy, logistics and digital commerce—can all raise productivity. Reducing logistics costs from 13–14% of GDP to global levels near 8% would alone shift India's TFP path. Human capital is equally critical: India's demographic dividend will turn into a burden if labour-force entrants lack the skills needed for a technologically evolving economy.

While India has accomplished remarkable growth through mobilization of labour and capital, the next stage of development requires something deeper: efficiency. What growth accounting data tells us is unambiguous: capital deepening is weakening and TFP is stagnant. Both challenges must be tackled head-on for India to achieve a sustainably higher growth path. The arithmetic is easy; execution is the real challenge.

These macro patterns reflect why the contribution of capital deepening has not translated into faster output-per-worker growth.

The second and more structural problem is our stagnant productivity growth. With a contribution of around 1.9 percentage points, our TFP is far too low for a country that aspires to high-middle-income status by 2047. Productivity improvements require not just factor accumulation but also deep institutional reforms: eliminating frictions in land and labour markets, improving contract enforcement, reducing logistics costs and radically improving human capital. India's TFP stagnation is visible in manufacturing, where output has grown but productivity hasn't accelerated meaningfully; and also in services, where traditional high-growth segments are maturing. The plateau is particularly concerning because the phenomenon of 'catch-up growth'—the ability to absorb and implement global technologies—should theoretically drive TFP up faster in a developing country.

Meanwhile, financial behaviour and capital allocation trends further complicate this picture. India's recent public-offer boom, with a record-breaking ₹1.8 trillion mobilized in 2024, reflects market enthusiasm but has not catalysed broad-based investment. A large part of these offers com-

prise offer-for-sale transactions, wherein the funds flow to existing shareholders instead of financing new production capacity. Investors are taking part in equity markets, but so far it has not become a driver of productive capital formation.

Gold imports, crossing 780 tonnes last year, tell another story. High household gold demand signals limited trust in financial instruments and continues to divert household savings away from productive capital. Every tonne of gold imported represents capital not invested in machinery, technology or infrastructure. In the growth-accounting framework, this matters: weaker domestic savings reduce the pool available for investment and ultimately makes capital deepening harder.

Yet, while India's situation is one of strategic urgency, it is not a sign of an impending slowdown. In fact, the unusual clarity provided by the decomposition of growth makes policy priorities unusually clear: To sustain 7–8% real GDP growth for another decade, we must both revive capital deepening and unlock TFP growth.

The first requires an investment renaissance. Easing India's remaining infrastructure bottlenecks, stabilizing policy signals for long-gestation industrial projects, accelerating insolvency resolution and enhancing state government execution capacity will help. India's infrastructure push has been a bright spot, but private investment must rejoin the cycle. Strategic public investment in green energy, semiconductor fabrication, advanced manufacturing and logistics corridors can crowd in private capital.

Unlocking TFP is harder but more essential. Judicial reforms, GST simplification, quality improvements in public education and greater competition in key markets—especially energy, logistics and digital commerce—can all raise productivity. Reducing logistics costs from 13–14% of GDP to global levels near 8% would alone shift India's TFP path. Human capital is equally critical: India's demographic dividend will turn into a burden if labour-force entrants lack the skills needed for a technologically evolving economy.

While India has accomplished remarkable growth through mobilization of labour and capital, the next stage of development requires something deeper: efficiency. What growth accounting data tells us is unambiguous: capital deepening is weakening and TFP is stagnant. Both challenges must be tackled head-on for India to achieve a sustainably higher growth path. The arithmetic is easy; execution is the real challenge.

These macro patterns reflect why the contribution of capital deepening has not translated into faster output-per-worker growth.

The second and more structural problem is our stagnant productivity growth. With a contribution of around 1.9 percentage points, our TFP is far too low for a country that aspires to high-middle-income status by 2047. Productivity improvements require not just factor accumulation but also deep institutional reforms: eliminating frictions in land and labour markets, improving contract enforcement, reducing logistics costs and radically improving human capital. India's TFP stagnation is visible in manufacturing, where output has grown but productivity hasn't accelerated meaningfully; and also in services, where traditional high-growth segments are maturing. The plateau is particularly concerning because the phenomenon of 'catch-up growth'—the ability to absorb and implement global technologies—should theoretically drive TFP up faster in a developing country.

Meanwhile, financial behaviour and capital allocation trends further complicate this picture. India's recent public-offer boom, with a record-breaking ₹1.8 trillion mobilized in 2024, reflects market enthusiasm but has not catalysed broad-based investment. A large part of these offers com-

prise offer-for-sale transactions, wherein the funds flow to existing shareholders instead of financing new production capacity. Investors are taking part in equity markets, but so far it has not become a driver of productive capital formation.

Gold imports, crossing 780 tonnes last year, tell another story. High household gold demand signals limited trust in financial instruments and continues to divert household savings away from productive capital. Every tonne of gold imported represents capital not invested in machinery, technology or infrastructure. In the growth-accounting framework, this matters: weaker domestic savings reduce the pool available for investment and ultimately makes capital deepening harder.

Yet, while India's situation is one of strategic urgency, it is not a sign of an impending slowdown. In fact, the unusual clarity provided by the decomposition of growth makes policy priorities unusually clear: To sustain 7–8% real GDP growth for another decade, we must both revive capital deepening and unlock TFP growth.

The first requires an investment renaissance. Easing India's remaining infrastructure bottlenecks, stabilizing policy signals for long-gestation industrial projects, accelerating insolvency resolution and enhancing state government execution capacity will help. India's infrastructure push has been a bright spot, but private investment must rejoin the cycle. Strategic public investment in green energy, semiconductor fabrication, advanced manufacturing and logistics corridors can crowd in private capital.

Unlocking TFP is harder but more essential. Judicial reforms, GST simplification, quality improvements in public education and greater competition in key markets—especially energy, logistics and digital commerce—can all raise productivity. Reducing logistics costs from 13–14% of GDP to global levels near 8% would alone shift India's TFP path. Human capital is equally critical: India's demographic dividend will turn into a burden if labour-force entrants lack the skills needed for a technologically evolving economy.