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RESEARCH PAPER

# SERVICES-LED DEVELOPMENT IN TUNISIA

## Reclaiming an Interrupted Trajectory



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## INTRODUCTORY SYNOPSIS

### **The Divergent Paths of Services-led Development in North Africa**

Conventional development economics has long treated the services sector as a residual absorber of labor displaced from agriculture and manufacturing. Recent advances in technology such as robotization and artificial intelligence (AI), however, have made manufacturing more skill- and capital-intensive, eroding its capacity to absorb labor at scale and forcing developing countries to consider services-led development strategies more seriously.

But which services could lead economic growth and structural transformation? Our research shows that services are internally heterogeneous in ways that existing aggregate analyses systematically obscure. The analytical framework underpinning this series classifies services into three categories—Knowledge Services (KS), Enabling Services (ES), and Local Services (LS). This classification was grounded in the empirical roles of services in production, trade, and structural transformation but also correspond closely to observable and systematic differences across multiple structural dimensions in the developed economies.

In a series of country and comparative studies on services as drivers of economic growth and structural transformation in the Global South, we look at three North African countries: Egypt, Morocco, and Tunisia. All three are middle-income economies facing the challenge of escaping the middle-income trap and sustaining convergence toward high-income status. All are geographically and institutionally positioned for deep integration with the European single market through the EU–Mediterranean partnership architecture. All already have large services sectors, accounting for 55–61 percent of GDP, so the central policy question is not whether to develop services but which services to develop and how.

Egypt, Morocco, and Tunisia have followed strikingly different structural trajectories over the past decade, despite sharing broadly similar starting conditions. That they have diverged—with Morocco deepening its integration into global value chains, Egypt engaging those chains asymmetrically, and Tunisia retreating from an initially strong position—shows both the potential and the fragility of services-led development.

Despite their high reliance on services, the three countries share a common structural weakness: a relatively thin base of knowledge services. These sectors—ICT, professional, and business services—are the primary engines of productivity and convergence in advanced economies. In the advanced countries of European Union, knowledge services account for roughly 15% to 17% of GDP. By contrast, Egypt’s knowledge-services sector remains particularly underdeveloped, at around 6% of GDP. Morocco and Tunisia reach only about 10%.

Instead of expanding these high-value activities, much of the growth in all three economies has been absorbed by local services, including retail and public administration, which are largely non-tradable and generate limited productivity gains. Consequently, none of the three countries is on a clear trajectory that would lead to closing the gap with advanced economies.

Within this shared constraint, however, the three countries exhibit sharply different structural patterns. Morocco is the most advanced case, having achieved what can be described as ‘dual integration’ into global value chains (GVCs). Its leading service sectors import specialized foreign inputs, while exporting high-value outputs, creating a two-way flow of knowledge and value.

This bilateral embeddedness is evident in both Morocco’s professional services and business-support sectors, which have successfully internationalized while maintaining strong domestic

linkages. The country's IT and software sector shows a degree of forward integration into foreign final demand — at 88–93% of sectoral value added — that far exceeds the EU15 average, reflecting deep and sustained export orientation that few North African peers have matched. Meanwhile, Morocco's logistics system—anchored by the Tanger Med port—functions not merely as a transit corridor, but is an integral part of global industrial supply chains. Yet Morocco's challenge lies in scale: these high-performing sectors remain too small to generate the economy-wide spillovers needed for sustained convergence.

Egypt presents a very different configuration, characterized by what may be termed 'autarky with upstream reach'. Its services participate in GVCs primarily as domestically self-contained input suppliers. On the output side, Egypt has a strong upstream presence, with its services embedded in foreign production at levels comparable to advanced economies. However, on the input side, Egypt imports very little specialized foreign knowledge or technology.

This asymmetry allows Egypt to engage in global markets but limits the learning and technological upgrading that such engagement typically facilitates. Internally, this is reinforced by a split within the knowledge-services sector. Professional services are largely domestically oriented with limited international reach, while business-support services operate as export enclaves with weak connections to the local economy. Egypt's central challenge is therefore to bridge these two disconnected pathways, and to ensure that the rents generated by strategic assets such as the Suez Canal do not crowd out investment in knowledge-intensive activities.

Tunisia is a case of interrupted transformation. At the beginning of the period, it possessed a strong foundation in knowledge services, with firms deeply integrated into European networks, and actively engaged in learning through imported expertise. Over time, however, this advantage has eroded. Political instability and macroeconomic pressures have made it harder for firms to access foreign inputs, leading to a form of involuntary domestic containment. At the same time, Tunisia's export orientation has weakened, and the expansion of its services sector has been driven largely by public administration. This growing weight of the state has absorbed resources and talent that might otherwise have supported the knowledge economy, creating a persistent structural drag. Tunisia's path forward therefore requires, first, restoring macroeconomic stability, and then rebuilding its international integration in key sectors such as professional services and ICT.

These three cases highlight distinct structural 'fingerprints' of services-led development. Morocco demonstrates a pattern of balanced, two-way integration that aligns most closely with the trajectory of advanced economies, though at insufficient scale. Egypt exhibits a one-sided form of participation that connects it to global markets without enabling meaningful learning or upgrading. Tunisia, finally, illustrates how an initially favorable position can be eroded by macroeconomic and institutional instability, leading to a gradual retreat from global integration.

The broader lesson is that services-led development is neither automatic nor self-sustaining. It requires deliberate and coordinated policies, tailored to each country's specific constraints. For Morocco, the priority is to scale up its high-performing sectors so that they can reshape the broader economy. For Egypt, the focus must be on integrating domestic and export-oriented activities, while deepening engagement with global knowledge flows. For Tunisia, stabilization is the necessary first step, followed by a renewed effort to rebuild its position in international service markets.

By expanding those service sectors that are both tradable and deeply embedded in GVCs, these economies can recreate—within a new structural context—the productivity growth and employment opportunities once associated with the manufacturing-led model of development.

## SYNOPSIS

Tunisia is a distinctive and cautionary case within services-led development in North Africa. Unlike its regional peers, Tunisia entered the last decade not in search of a knowledge economy but already possessing one. Drawing on OECD TiVA and input-output data covering 2012–2022, this paper documents that in 2012, Tunisia's knowledge services firms were deeply integrated into global networks, while importing advanced foreign expertise, software, and methodologies at levels comparable to, or even exceeding, those of advanced economies. This early advantage suggested that Tunisia was well positioned for convergence toward high-income status. However, the subsequent decade tells a story of interruption rather than consolidation. Instead of building on its initial strengths, Tunisia experienced a gradual erosion of its structural advantages. Today, its central challenge is to reverse this retreat and reestablish itself as a competitive hub for high-value services.

The most striking feature of Tunisia's recent trajectory is a reversal in its engagement with global value chains (GVCs). In a typical development pattern, firms deepen their integration by importing more sophisticated inputs and using them to produce higher-value exports. Tunisia has moved in the opposite direction. In 2012, its knowledge services sectors sourced foreign inputs at rates matching or exceeding EU15 levels, a structural inheritance from its historically deep professional and ICT ties with European markets that neither Egypt nor Morocco possessed at the time. By 2022, that advantage had been largely surrendered: computer programming's foreign input content had fallen to less than half the EU15 level, and professional services had given up almost its entire initial lead. This setback has curtailed the learning-by-importing that is essential for technological upgrading. Meanwhile, Tunisia's export orientation has weakened, with the share of services reaching foreign final demand declining across most sectors. The country thus finds itself in a position of growing domestic containment, delivering less value to global markets than it did a decade ago.

This retreat has been accompanied by a significant shift in the composition of Tunisia's services sector. While knowledge-intensive activities have stagnated or declined, public administration has expanded markedly. In the aftermath of the 2011 revolution, public-sector hiring was used for social stabilization, leading to a substantial increase in the state's role in the economy. By 2022, public administration accounted for a sizable share of GDP, creating a structural drag. The expansion of the state has absorbed fiscal resources, credit, and skilled labor that might otherwise have supported the growth of knowledge services. As a result, Tunisia's services sector is growing in size, but deteriorating in quality, with an increasing concentration in non-tradable, low-productivity activities.

Despite these challenges, Tunisia retains notable pockets of resilience that point to its underlying potential. Professional and technical services stand out as the one knowledge services sub-sector to have demonstrated full recovery from external shocks. This subsector has maintained its international orientation at the 2012 level, despite the security disruptions of 2015 and the COVID-19 shock of 2020. These firms, often engaged with markets in Europe and Francophone Africa, represent a core and structurally singular strength of the Tunisian economy, combining domestic embeddedness with export competitiveness. Similarly, the software and IT outsourcing sector has held its ground, reflecting a deep reservoir of technical capability that has yet to be fully scaled. In fact, Tunisia's IT sector remains relatively large compared to the country's economic size, indicating that the foundations for a dynamic digital economy are still in place.

Tunisia's enabling services also provide a valuable structural asset, though of a different nature to those found in Morocco. Rather than functioning as an international transit hub, Tunisia's transport and logistics system is primarily oriented toward the domestic economy. Its road freight and warehousing networks are deeply embedded in local production, supporting manufacturing zones, agricultural exports, and processing industries. This domestic logistics backbone plays a crucial

role in maintaining the functioning of the economy, but it requires modernization to support more advanced, knowledge-intensive forms of trade.

A particularly concerning development is the weakening of administrative and support services, including business process outsourcing (BPO). In contrast to Morocco, where this sector serves as a bridge between domestic industry and global markets, Tunisia's BPO sector has come under pressure from both sides. It is losing competitiveness internationally, while becoming less connected to the domestic economy. This 'double squeeze' is especially problematic because such services often provide entry points into the formal knowledge economy for young, educated workers.

Taken together, these trends suggest that Tunisia's difficulties are not rooted in a lack of capability, but in an unfavorable macroeconomic and institutional environment. The country possesses many of the essential building blocks for a successful knowledge-based economy, but has been unable to scale them. Restoring its development trajectory therefore requires a twofold effort. First, macroeconomic stabilization is essential to ease foreign-exchange constraints, reduce the fiscal burden of an expanding public sector, and allow firms to reconnect with global markets. Second, a coordinated 'big push' is needed to build on the existing strengths of professional services and the IT sector, transforming them from resilient niches into broad-based drivers of growth. With the right combination of stability and strategic focus, Tunisia has the potential to reclaim its earlier leadership position, and to return to the path toward high-income convergence.

## **SERVICES-LED DEVELOPMENT IN TUNISIA: RECLAIMING AN INTERRUPTED TRAJECTORY**

*This paper is the third in a series of country and comparative studies that together comprise a research program on services as drivers of economic growth and structural transformation in the Global South. The paper analyzes the pattern of Tunisia's services-led economic growth from 2012- 2022 using a specialized three-category framework: knowledge services (KS), enabling services (ES), and local services (LS). Using data from the OECD Trade in Value Added (TiVA), Trade in Employment (TiM), and Input-Output databases, the study evaluates Tunisia's structural transformation against regional peers Morocco and Egypt, as well as EU15 and US benchmarks. The analysis focuses on indicators of global value chain (GVC) integration, domestic production linkages, employment structure and external demand, and productivity to determine if Tunisian services are serving as engines of growth and export-led convergence.*

*The analysis reveals a structural trajectory that is unique in the North African dataset: Tunisia entered the period with KS firms importing foreign specialized intermediates at rates matching or exceeding EU15 levels, providing an initial structural advantage over both Morocco and Egypt. Yet Tunisia systematically surrendered that advantage in the decade to 2022 as foreign input sourcing declined across every major KS sub-sector, while the EU15 benchmark rose. Upstream GVC participation, meanwhile, remained below EU15 levels in all but one KS sector, confirming that initial input openness never converted into deep structural embedding in global production networks. The result is a services economy that has drifted in an unfavorable direction in terms of composition: the KS GDP share has declined, while public administration has expanded, and forward GVC integration has weakened across most tradable sub-sectors. Reversing this trajectory requires macroeconomic stabilization as a precondition, combined with deliberate investment to scale professional and technical services—the one KS sub-sector that has demonstrated international resilience—and to deepen the ICT sector's GVC embedding, before its initial structural advantages erode further.*

# 1. INTRODUCTION AND COUNTRY OVERVIEW

## The Series Context

This paper is the third in a series of country and comparative studies that comprise a research program on services as drivers of economic growth and structural transformation in the Global South. The series applies to a set of developing and middle-income economies a common analytical framework and a common set of empirical indicators, drawn from the OECD Trade in Value Added (TiVA), Trade in Employment (TiM), and Input-Output databases. The aim is to identify which specific services sub-sectors have the structural characteristics necessary to serve as engines of productivity growth, foreign-exchange generation, and sustained convergence toward high-income status.

The series begins with a framework paper entitled ‘*A Framework to Assess Services as a Driver for Economic Growth and Structural Transformation*’ (PCNS Research Paper RP-02.26, March 2026—hereafter the Framework Paper). That paper provides the research program’s conceptual and empirical foundation. Conventional development economics has long treated the services sector as a residual absorber of labor displaced from agriculture and manufacturing. Recent advances in robotization and artificial intelligence (AI), however, have made manufacturing more skill- and capital-intensive, eroding its capacity to absorb labor at scale, and forcing developing countries to consider services-led development strategies more seriously. The Framework Paper sheds light on this challenge by demonstrating that services are internally heterogeneous in ways that existing aggregate analyses systematically obscure.

The analytical framework underpinning this series classifies services into three categories: knowledge services (KS), enabling services (ES), and local services (LS). This classification is grounded in conventional economic reasoning about the heterogeneous roles of services in production, trade, and structural transformation. In particular, differences in tradability, knowledge intensity, and potential for scale and spillovers suggested that not all service activities contribute equally to growth and convergence.

Subsequent empirical analysis using EU15<sup>1</sup> data, however, has shown that these intuitive distinctions correspond closely to observable and systematic differences across multiple structural dimensions. When evaluated using a comprehensive set of indicators derived from OECD TiVA, TiM, and input-output data, the three groups exhibit clearly differentiated profiles in terms of global value chain (GVC) integration, domestic production linkages, employment generation, and productivity.

This empirical validation is critical. It demonstrates that the KS–ES–LS taxonomy is not an arbitrary or purely conceptual classification, but one that reflects underlying economic regularities observed in high-income economies. The EU15 thus serves as a benchmark not only for levels of development, but also for identifying the structural characteristics associated with successful services-led growth.

To operationalize this framework, the analysis employs a unified set of sixteen quantitative indicators derived from OECD databases. These indicators capture four main aspects of growth and structural transformation: GVC participation (EXGR\_DVA, EXGR\_FVA, FFD\_DVA, and FEXGR\_DVA), domestic production linkages (shares in GDP, Hirschman–Rasmussen backward and forward indices), employment structure and external demand linkages (employment shares for broad sectors and for detailed services, EXGR\_DEM, and FFD\_DEM), and productivity and employment impact (value

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1. OECD TiVA’s EU15 is the historically-defined group of 15 EU member states prior to the 2004 enlargement — which is today’s EU14 plus the UK. The UK is included throughout the entire time series, including post-Brexit years, precisely to maintain analytical consistency. The OECD deliberately retains this composition rather than switching to a current-membership definition.

added per worker, employment multipliers, value added multipliers, labor income shares, and labor income multipliers). Taken together, they provide a comprehensive and internally consistent system for evaluating how different service sub-sectors contribute to growth, employment, and structural transformation. Annex 1 summarizes these indicators.

Within this framework, knowledge services (KS) comprise ICT (J58–J63) and professional and business services (M and N); enabling services (ES) include transport and storage (H) and finance (K); and local services (LS) include distribution, hospitality, real estate, public administration, and social services.

## The Country Studies: North Africa

This paper applies the framework to Tunisia. It is the third paper in the series and the second of three country studies covering North African economies. Companion papers apply the same framework to Morocco and Egypt, allowing both country-specific analysis and structured regional comparison.

The three North African economies were selected for analytically specific reasons. All three are middle-income economies facing the challenge of escaping the middle-income trap and sustaining convergence toward high-income status. All are geographically and institutionally positioned for deep integration with the European single market through the European Union–Mediterranean partnership architecture. All already have large services sectors, accounting for 55%–61% of GDP, so the central policy question is not whether to develop services, but which services to develop and how.

At the same time, the three countries display distinct structural configurations in terms of knowledge, enabling, and local services, as well as different trajectories of GVC integration. This variation makes comparative analysis particularly informative, allowing the framework to distinguish between common structural constraints and country-specific opportunities.

## Expectations and Analytical Focus

The Framework Paper generated a set of testable expectations for middle-income economies with large services sectors. In general, it predicted that knowledge services will remain below the levels observed in high-income benchmarks, such as the EU15, and that their integration into GVCs—particularly forward integration into foreign final demand—will be limited. Enabling services are expected to be relatively well developed as facilitators of trade and production, while local services are likely to dominate employment and domestic demand, without contributing significantly to export-led growth.

The empirical analysis that follows examines the extent to which these patterns are observed in Tunisia, and identifies deviations that may signal either emerging strengths or structural constraints. Particular attention is given to the internal composition of knowledge services, the balance between domestic embedding and international orientation, and the interaction between services sectors and broader macroeconomic and institutional conditions.

By combining value-added and input–output indicators within a unified framework, the analysis provides a multidimensional assessment of Tunisia's services sector, and identifies the policy priorities required to support a transition toward a more productive, export-oriented, and structurally transformative services economy.

## 2. TUNISIA'S SERVICES SECTOR THROUGH THE LENS OF FOUR STRUCTURAL GROUPS

The analytical framework applied in this series organizes its indicators into four groups (GVC participation and value-added trade structure, domestic production linkages, employment structure and external demand linkages, and productivity and employment impact) with the aim of reading each country's services sector as a structural whole. Before starting the indicator-by-indicator analysis, it is worth sketching the picture that emerges when Tunisia's data are viewed through this lens, since the overarching pattern carries analytical weight that can otherwise be obscured by the detail of individual sections.

The first structural finding concerns the overall direction of GVC participation. Unlike Morocco, for which forward integration into foreign final markets rose across knowledge services over the period studied, Tunisia's equivalent trajectory is of deterioration across most sectors. In 2012, Tunisia had forward integration levels broadly comparable to Morocco's; by 2022, it was considerably below, not because of a single structural shock but through the compounding effect of political instability, macroeconomic pressure, and underinvestment. The main exception was professional and technical services, which demonstrated a degree of international market resilience that other sectors did not, recovering from discrete shocks to end the period near its starting level. Computer programming and information services is a second partial exception, holding its forward integration baseline, while most of the ICT sector retreated. These two sub-sectors are the anchors around which any recovery of Tunisia's international services orientation would need to be built.

The foreign input content of exports (EXGR\_FVA) and the upstream GVC participation indicator (FEXGR\_DVA) sharpen the structural retreat narrative with a dimension unique to Tunisia in this dataset. At the start of the period, Tunisia's knowledge services sectors sourced foreign inputs at rates at or above EU15 levels—an initial structural advantage over both Egypt and Morocco, reflecting Tunisia's historically deep professional and ICT services ties with European markets. Over the following decade that advantage was systematically eroded: by 2022, computer programming's foreign-input content had fallen from near-EU15 levels to less than half, and professional services had surrendered almost all of its initial lead. On upstream GVC participation, Tunisia's ICT sectors remain below the EU15 benchmark, and far behind Morocco, confirming that initial input openness did not translate into structural embedding in global production networks. The combination of declining input integration and limited upstream positioning in precisely the sectors with the greatest development potential—computer services, professional services, and finance—is the clearest evidence of why Tunisia's structural trajectory is one of interrupted, rather than advancing, GVC integration.

The second structural finding concerns domestic production linkages, and here Tunisia tells a more constructive story than the GVC evidence alone would suggest. Its transport and logistics sector—land transport, warehousing, and water transport—is embedded deeply in the domestic economy as a forward linker, supplying intermediate inputs to manufacturing zones, agricultural export networks, and processing industries, at rates well above the economy average. This domestic logistics backbone is a genuine structural asset that distinguishes Tunisia from Morocco, where the logistics sector is internationally rather than domestically oriented. Within knowledge services, professional services and administrative support maintained above-average domestic forward linkages throughout the period, though both declined. On GDP composition, the structural trend is unfavorable: knowledge services edges down while local services expands, driven overwhelmingly by public administration, which is the least-productive, least-tradable, and most fiscally costly component of the services economy.

The third and fourth structural groups—employment structure and productivity—are now available for Tunisia from the 2025 edition of the OECD Trade in Employment (TiM) database. This represents a significant expansion relative to earlier versions of the series. Tunisia’s employment and productivity data are accordingly incorporated in sections 12 and 13 of this paper, alongside the value-added and production-structure evidence from the first two groups. As will be seen, the employment evidence provides important additional texture to the diagnosis derived from the GVC and domestic-linkage indicators, corroborating several of the structural findings while adding dimensions—particularly around labor-market composition, productivity per worker, and labor income distribution—that the value-added data alone cannot capture.

### 3. SECTORAL COMPOSITION OF GDP: KNOWLEDGE SERVICES

Table 1 shows that Tunisia’s knowledge services sector accounted for 10.7% of GDP in 2012—the sum of ICT (J) at 5.15%, professional and technical services (M) at 3.20%, and administrative and support services (N) at 2.34%. By 2022, this aggregate had fallen to 10.2%, with declines distributed across all three components: J fell to 4.83%, M to 3.07%, and N to 2.28%. The aggregate KS decline of approximately half a percentage point over eleven years is modest in magnitude but consistent in direction, and it runs opposite to the EU15 trend of expanding KS shares throughout the same period.

Within the J sector, decline has been driven by telecommunications (J61), the share of which fell from 3.38% in 2012 to 3% by 2022—a retreat of 0.38 percentage points, which mirrors the global pattern of telecom revenue compression under internet substitution, but which in Tunisia’s case is amplified by the broader macroeconomic stagnation that has constrained the sector’s ability to invest in next-generation infrastructure and service upgrading. Tunisia’s telecoms sector in 2012 was competitive and relatively well-developed by regional standards; data up to 2022 suggest it maintained its absolute size without generating proportional growth as the economy evolved.

The computer programming and information services sub-sector (J62–63) provides a different and analytically important signal. Its GDP share held with unusual stability at 1.31% to 1.39% throughout the entire period, rising slightly to 1.38% in 2022 after a modest dip in 2015–2017. In an environment in which most KS components are declining, J62–63’s stability is notable: it suggests that Tunisia’s software development and IT outsourcing sector maintained its structural position even under adverse macroeconomic conditions. The absolute level—1.38% of GDP—is the highest of the three North African countries for this subsector, exceeding Morocco’s 0.55% and reflecting Tunisia’s historically earlier and deeper investment in digital services capability.

Professional and technical services (M) declined from 3.20% to 3.07% over the period, with most of the fall occurring in the 2017–2018 transition, rather than gradually. The sector’s GDP share was otherwise remarkably stable at 3.18% to 3.20% from 2012 to 2016, before settling at a modestly lower level of approximately 3.02%–3.08% across 2018–2022, suggesting that M’s structural position has been broadly preserved even if it has not expanded. Administrative and support services (N) followed a similar pattern, declining from 2.34% to 2.28% with minor variations. Tunisia’s N sector, at approximately 2.3% of GDP, is the smallest of the three countries—well below Morocco’s 3.77% to 3.92%—a gap that matters for the structural analysis, because N’s dual role as both an international service exporter and a domestic supply chain node is less developed in Tunisia than in Morocco.

The EU15 benchmark comparison produces the same sobering finding as for Morocco: EU15 KS shares that rose from 15.6% in 2012 to 17.4% in 2022, dwarf Tunisia’s 10% to 11%. But the more alarming comparison is directional: EU15 KS shares rose over the decade, while Tunisia’s fell. The gap is not merely one of level but of trajectory, and it widened rather than narrowed. Tunisia began the period better positioned than Morocco in KS share; it ended it in an essentially identical position, having failed to translate its initial structural advantage into convergent growth.

## 4. SECTORAL COMPOSITION OF GDP: ENABLING SERVICES

Tunisia's enabling services sector is the largest of the three countries in relative terms, accounting for 12.26% of GDP in 2012, and rising to 13% by 2022. The sector expanded its structural weight even as KS contracted. This expansion was the product of two components moving in opposite directions: a transportation and storage sector (H) that started at 8.51% in 2012, contracted to 7.79% in 2015 under the mid-decade security and macroeconomic disruptions, then recovered and expanded to 8.61% by 2019 before settling at 8.54% in 2022, and a financial and insurance sector (K) that rose steadily from 3.75% to 4.46%, a structural improvement of 71 basis points, which represents one of the clearest positive trends in the entire dataset.

The H sector's stability masked interesting internal dynamics. Land transport (H49), the dominant H sub-component, ranged between 4.00% and 4.52% of GDP over the period, contracting to its 2015 trough of 4.00% before recovering to approximately its pre-contraction level of 4.44%–4.52% by 2019–2022. This recovery tracked the partial normalization of regional trade flows and cross-border logistics after the disruptions of the mid-2010s. Warehousing and support activities (H52) followed a similar arc, declining from 2.38% to 2.08% in 2015, before recovering to 2.38% by 2022. Air transport (H51) declined from 0.49% to 0.44%—a structurally significant contraction reflecting the damage done to Tunisia's aviation sector by the 2015 terror attacks, and the incomplete recovery of international tourist arrivals in subsequent years. Water transport (H50) showed striking stability at 0.29% to 0.31% throughout, suggesting a maritime sector with a GDP contribution that is broadly constant but not expanding.

The rising financial services share—from 3.75% to 4.46% of GDP over the decade—was Tunisia's most consistently positive structural trend in any services category. It reflected the deepening of formal financial intermediation in the Tunisian economy, with banking sector credit expansion and insurance market growth more than offsetting the headwinds from rising non-performing loans and a constrained investment climate. That financial services continue to grow its GDP share in an environment of macroeconomic stress, suggests genuine institutional resilience in this sector, a finding corroborated by the forward linkage evidence discussed in section 9.

The overall size of Tunisia's enabling services sector, at 12% to 13% of GDP, substantially exceeds Morocco's 8% to 9%, primarily because Tunisia's transportation and storage sector (H), at 8.5% dwarfs Morocco's 3.5% to 4.6%. The explanation lies in the very different character of the two countries' logistics economies. Morocco's transport sector is internationalized through Tanger Med and the automotive supply chain, generating relatively low domestic value added per unit of gross output. Tunisia's transport sector is domestically embedded: its land transport and warehousing serve dense domestic manufacturing and agricultural export networks, generating higher domestic content ratios, and more extensive forward linkages into the domestic economy. The GVC integration data in sections 6 and 7 make this distinction quantitatively precise.

## 5. SECTORAL COMPOSITION OF GDP: LOCAL SERVICES

Tunisia's local services accounted for 35.38% of GDP in 2012, rising to 37.76% by 2022, an increase of 2.38 percentage points driven almost entirely by the expansion of two sub-sectors: public administration, and wholesale and retail trade. The composition of this expansion was structurally regressive: neither public administration nor retail trade generate foreign exchange, build exportable capabilities, or produce the knowledge spillovers associated with productivity convergence.

Public administration (O) rose from 10.17% of GDP in 2012 to a peak of 12.41% in 2020, before partially falling back to 11.72% by 2022. This was the largest single structural shift in Tunisia's GDP composition over the period, directly reflecting the post-revolution political economy, in which successive governments expanded public-sector employment as a mechanism for managing social pressures and absorbing the graduates from an education system that produced faster than the private sector could absorb. The 2020 peak was partly a COVID-19 statistical effect—public administration's share rises mechanically when other sectors contract—but the underlying trend of rising public-sector weight was already established before the pandemic. By 2022, public administration accounted for over 12% of Tunisia's GDP, a figure that compresses fiscal space for infrastructure investment, crowds out private-sector wage dynamics, and represents a persistent structural drag on the economy's capacity to reallocate resources toward knowledge-intensive activities.

Wholesale and retail trade (G) rose from 8.57% to 9.50% of GDP over the period—one of the few genuine expansionary trends in the data, reflecting both domestic consumption growth and the gradual formalization of trade networks. The rising G share is consistent with the forward linkage evidence examined in section 9, with G recording the highest forward index in the economy. Accommodation and food services (I), Tunisia's tourism proxy, held between 4.42% and 4.82% over the period, with notable volatility. The sector contracted from 4.55% to 4.42% between 2012 and 2015, capturing the tourism shock of the Bardo and Sousse attacks, before recovering to 4.65% by 2022. The recovery is incomplete relative to what would have been expected under a normal trajectory without security disruptions; the 2015–2016 contraction established a lower base, from which the sector has rebuilt only gradually.

Health services (Q) recorded an unusually low GDP share of 0.22% throughout the entire period, an order of magnitude smaller than the EU15 equivalent, and even smaller than Morocco's equivalent. This understatement in the OECD national accounts data likely reflects the private and informal character of much of Tunisia's health sector, including the medical tourism activity for which Tunisia is regionally well known, and thus should be interpreted cautiously as a statistical rather than purely structural feature.

## 6. OVERALL SERVICES COMPOSITION: STRUCTURAL ASSESSMENT AND EU15 COMPARISON

Tunisia's total services sector expanded from approximately 58% of GDP in 2012 to 61% in 2022, a structural shift toward services larger in magnitude than Morocco's slightly declining trajectory. The traditional national accounts classification would record this as a positive sign of structural transformation. But this is precisely where the three-category framework proves its analytical value. Disaggregating the aggregate reveals that the expansion is neither compositionally favorable nor as good as it appears. It was driven by local services, particularly public administration, and to a lesser extent by enabling services through financial-sector growth, while knowledge services edged downward. Tunisia is becoming more services-oriented, but the services it is accumulating are predominantly non-tradable, low-productivity, and domestically oriented. The headline number flatters a structurally unfavorable trajectory.

The structural contrast between Tunisia and Morocco is sharper than the aggregate KS shares suggest. Both countries registered KS shares of approximately 10% to 11% in 2012, and ended at about 10% in 2022. But the internal compositions differ substantially. Tunisia's J sector (information and communication), at 5.15%, is far larger than Morocco's 3.46%, reflecting Tunisia's earlier and deeper investment in telecoms and IT infrastructure. Tunisia's H sector (transportation and storage), at 8.51%, far exceeds Morocco's 3.27%, reflecting the domestically embedded character of Tunisia's logistics economy. But Tunisia's N sector (administrative and support services—BPO), at 2.34%,

is smaller than Morocco's 3.56%. This difference is analytically important: N's combination of domestic forward linkages and international market orientation makes it a structural anchor for KS development in a way that Tunisia's BPO sector—smaller and less internationally connected—has not replicated.

Against the EU15 benchmark, Tunisia faces the same fundamental structural gap as Morocco and Egypt: KS shares of 10% versus 15.6% to 17.4%, with a diverging rather than converging trajectory. The EU15 benchmark makes the structural diagnosis precise: Tunisia is not merely below the EU15 threshold, but has been moving in the wrong direction, with a contracting KS share while the benchmark economies continued to expand theirs. The decade of political instability and macroeconomic stress did not cause a structural collapse—Tunisia's KS sector remains approximately intact—but it has prevented the structural deepening that convergence requires. The three-category framework makes this diagnosis concrete: the decade's data show not merely a failure to scale knowledge services, but an active compositional regression, with local services—and specifically the non-tradable public-administration component—claiming the structural space that a convergence path would require knowledge services to occupy.

## 7. BACKWARD GVC INTEGRATION: EXGR\_DVA ANALYSIS

Table 5's EXGR\_DVA values for Tunisia, together with the complementary EXGR\_FVA evidence in Table 12, reveal a pattern that is structurally intermediate between Egypt's uniformly high domestic content, and Morocco's more differentiated GVC-integrated profile. To complement the EXGR\_DVA evidence, Table 12 reports EXGR\_FVA (foreign value added embodied in exports) for the same sectors and years. By construction, EXGR\_FVA captures the share of exports that originate from foreign intermediate inputs, and is therefore the direct counterpart to EXGR\_DVA. Together, the two indicators provide a complete decomposition of the value-added structure of exports, and allow a more precise assessment of input-side GVC participation. While EXGR\_DVA highlights the domestic content of Tunisia's services exports, EXGR\_FVA indicates the extent to which these exports rely on internationally sourced inputs, and thus the degree of integration into global production networks.

Tunisia's knowledge services recorded EXGR\_DVA ratios in the 84% to 93% range throughout the period—lower than, but broadly comparable to, Egypt's 88% to 97%, while the range in Morocco was similar, but with a consistent downward trend. Tunisia's KS EXGR\_DVA exhibits a distinctive U-shaped trajectory: values declined modestly from 2012 to 2017, then rose significantly from 2017 to 2020, before receding partially by 2022.

The J sector aggregate moved from 84.3% in 2012 to a low of approximately 83.1% in 2017, then rose sharply to 91.5% in 2020, before settling at 89.4% in 2022. J62–63 (computer programming) followed the same pattern: 87.4% in 2012, falling to 86.2% in 2017, then rising to 93.4% in 2020 and 91.9% in 2022. M and N exhibited identical trajectories. This rise in EXGR\_DVA from 2017 to 2020 is the most analytically challenging feature of Tunisia's backward integration data. Rising domestic content ratios in KS are not straightforwardly positive: they could reflect genuine improvement in the self-sufficiency of Tunisia's professional services—for example, developing locally sourced software tools, methodologies, and service platforms—but they could equally reflect a retreat from GVC participation under macroeconomic pressure, with firms sourcing fewer imported intermediate inputs because of foreign-exchange constraints and reduced access to international supplier networks. The 2020 peak coincided with the COVID-19 crisis, which reduced imports broadly and would mechanically raise domestic content ratios. The ambiguity requires caution: Tunisia's rising KS EXGR\_DVA cannot be interpreted as GVC upgrading without corroborating evidence from the forward integration data. Table 6 provides that corroboration, as will be seen.

The EXGR\_FVA results in Table 12 clarify this ambiguity. The rise in EXGR\_DVA observed between 2017 and 2020 corresponded to a decline in EXGR\_FVA across most knowledge-services sectors, confirming that the increase in domestic content reflected a reduction in foreign input use, rather than a structural upgrading of domestic capabilities. This pattern was consistent with macroeconomic constraints, including foreign exchange pressures and reduced access to international supplier networks, rather than with deepening integration into global value chains. The partial reversal after 2020, with EXGR\_DVA declining and EXGR\_FVA recovering modestly, further supports this interpretation of cyclical disintegration, followed by incomplete reintegration.

Tunisia's transport sector (H) EXGR\_DVA remained in the 67% to 79% range across the period, substantially higher than Morocco's 57% to 72% and lower than Egypt's 92% to 96%. This intermediate position accurately reflects Tunisia's intermediate logistics profile: more internationally connected than Egypt's domestically oriented transport sector, but less deeply embedded in international transit and automotive supply chains than Morocco's Tanger Med-anchored complex. The sub-sector patterns within H are telling: water transport (H50) declined from 57.3% in 2012 to 48.1% by 2022—an accelerating decline in domestic content that may reflect growing import intensity in maritime shipping operations as Tunisia's Mediterranean trade deepens. Air transport (H51) declined from 71.4% to 62.2% by 2022, with the 2022 low point reflecting both the reconstruction of post-COVID-19 international aviation routes, and the import intensity of rebuilding air connectivity. Land transport (H49) also fell from 77.9% to 69.1%—its lowest recorded value—by 2022, which, combined with the forward linkage evidence examined in section 8, suggests a land transport sector that is simultaneously becoming more import-intensive and more domestically embedded. This combination is consistent with a sector investing in international equipment and technology to serve deeper domestic supply chains.

The EXGR\_FVA evidence also helps position Tunisia's transport sector within the regional spectrum. Foreign value-added shares in transport services are higher than in Egypt, but generally lower and less dynamic than in Morocco, reflecting Tunisia's intermediate status between domestically oriented and fully GVC-integrated logistics systems. The gradual increase in foreign input intensity in sub-sectors such as maritime and air transport, suggests some degree of integration into international logistics networks. But the absence of a sustained upward trend indicates that Tunisia has not achieved the deep embedding into global production chains observed in Morocco's port-centered model.

Financial services (K) records EXGR\_DVA rising from 87.4% in 2012 to 93.6% in 2020, before settling at 91.4% in 2022—the highest EXGR\_DVA trend of any services sector in Tunisia's dataset. The rising domestic content in financial exports suggests that Tunisia's banking and insurance sector deepened its domestic value content over the period, consistent with the sector's GDP share expansion and its growing role as a domestic credit intermediary. The high values also confirm that Tunisia's financial-sector exports—primarily cross-border financial services to regional markets—are built predominantly on domestic capital and Tunisian financial infrastructure, rather than on re-exported foreign financial products.

The EXGR\_FVA profile of financial services further reinforces the interpretation of increasing domestic orientation. The decline in foreign value-added shares, alongside rising EXGR\_DVA, suggests that Tunisia's financial sector exports are becoming more reliant on domestically generated intermediation, rather than on internationally sourced financial products or services. While this may reflect institutional strengthening within the domestic financial system, it also indicates limited integration into global financial service networks, and constrained cross-border intermediation capacity.

## 8. FORWARD GVC INTEGRATION: FFD\_DVA ANALYSIS

The FFD\_DVA values in Table 6, together with the complementary FEXGR\_DVA evidence in Table 13, deliver the most significant and most sobering structural finding in Tunisia's dataset. Whereas Morocco's forward integration indicators showed rising trajectories across knowledge services, confirming the progressive reorientation of KS output toward foreign final demand, Tunisia's equivalent data show a decade of overall deterioration. Across virtually every KS and enabling services sub-sector, Tunisia's 2022 FFD\_DVA values were lower than their 2012 starting points, with the principal exception of professional and technical services (M). Tunisia's services sectors thus delivered a smaller share of their value to foreign final consumers in 2022 than in 2012. The country's services economy is becoming more domestically oriented. This is happening not through a deliberate import-substitution strategy, but as an involuntary consequence of reduced competitiveness, political disruption, and macroeconomic constraints, which have progressively disconnected Tunisian services from international demand chains.

To complement the FFD\_DVA evidence, Table 13 reports FEXGR\_DVA (domestic value added embodied in other countries' exports). This indicator captures Tunisia's participation in global production chains as an upstream supplier, measuring the extent to which Tunisian services contribute indirectly to foreign exports. Together, FFD\_DVA and FEXGR\_DVA distinguish two dimensions of forward integration: direct engagement with foreign final demand, and indirect participation through intermediate input provision to foreign producers.

The J sector aggregate FFD\_DVA fell from 33.3% in 2012 to 23.9% in 2015—a sharp drop of nearly 10 percentage points in three years—recovering modestly to 28.8% in 2017, then declining again through the 2019–2020 period to reach a low of 19.4% in the pandemic year 2020, with partial recovery to 25.3% by 2022. The 2022 value of 25.3% was nearly 8 percentage points below the 2012 starting point, a structural retreat that represents a significant deterioration in the international orientation of Tunisia's ICT sector. Comparing this to Morocco's J aggregate FFD\_DVA of 36% to 43%, or to Morocco's J62–63 of 88% to 93%, makes the structural divergence between the two countries' ICT development paths vivid. Tunisia entered 2012 with a larger ICT sector in GDP-share terms and similar forward integration values; it ended 2022 with both a smaller ICT share and much weaker forward integration.

The FEXGR\_DVA results in Table 13 indicate that this deterioration extends beyond final demand to Tunisia's upstream participation in global production networks. Across most knowledge-services sectors, domestic value added embodied in foreign exports remained low and, in several cases, declined over the period. This confirms that Tunisia is not only exporting less to foreign final markets, but is also becoming less embedded as a supplier of intermediate services within international production chains—a dual weakening of forward integration.

J62–63 (computer programming and information services) was the most resilient KS sub-sector in Tunisia's forward integration data: starting at 34.7% in 2012, declining to 26.0% in 2015—the 2015 low is likely connected to the security shock that year—recovering to 33.4% in 2017, and ending at 33.5% in 2022. The 2022 value was essentially equal to the 2012 starting point, making J62–63 the only KS sub-sector to have preserved its forward integration baseline over the full decade. This partial resilience is significant: Tunisia's software and IT services firms that serve European clients have maintained their international market connectivity, even as the broader ICT sector has lost ground. The absolute level of 33.5%, however, is far below Morocco's equivalent of 90.5%. The structural gap in IT services export development between the two countries is enormous.

The relative resilience of J62–63 is partially reflected in the FEXGR\_DVA data. While levels remain modest compared to Morocco, there is evidence of limited but stabilizing upstream participation,

suggesting that Tunisia's software and IT services sector retains some integration into international production networks. However, the absence of strong growth in FEXGR\_DVA indicates that this integration has not deepened over time, and the sector has not transitioned toward the dual upstream-downstream role observed in more advanced GVC participants.

Professional and technical services (M) is Tunisia's single strongest, and most consistently positive, forward integration indicator. Its FFD\_DVA was 38.3% in 2012, dipped to 33.6% in 2015 (the security shock year), recovered to 37.7% to 39.3% across 2016–2019, fell to 29.6% in 2020 in the context of COVID-19, then recovered fully to 38.9% by 2022. This pattern of ultimate stability at 38% to 39%, interrupted by discrete shocks, distinguishes M structurally from the declining-trend sectors. Tunisia's engineering consultancies, technical advisory services, and professional practices serving regional markets have demonstrated a degree of international market resilience that the ICT sector has not. The 2022 value of 38.9% placed M ahead of N and J in Tunisia's KS forward integration hierarchy. It represents a genuine structural capability that the country can build upon, provided the macroeconomic and governance environment stabilizes sufficiently to support further internationalization.

The EU15 benchmark for professional and technical services FFD\_DVA—which ranged from 23% to 27% throughout the reference period—actually sits below Tunisia's M at 38.9% in 2022. This is not because Tunisia is outperforming EU15 in any competitive sense, but because EU15 professional services firms serve a vast domestic market that absorbs most of their output domestically; the small fraction reaching foreign final consumers is therefore low as a share of total value added. The meaningful comparison is with Morocco, whose M reached 68.1% by 2022, demonstrating what a small, open North African economy with deep ties to European markets can achieve when its professional services sector builds sustained foreign client relationships. Tunisia's M has preserved baseline international market connectivity, but has not deepened it to the degree that Morocco has over the same decade.

The FEXGR\_DVA evidence further qualifies the positive interpretation of M. While the sector maintains strong and resilient FFD\_DVA, its upstream participation in foreign production processes remains limited. Tunisian professional services are therefore primarily oriented toward direct exports to foreign clients, rather than functioning as embedded intermediate inputs within GVCs. This suggests that M has preserved international market access, but has not yet achieved the deeper integration that characterizes mature KS exporters.

Administrative and support services (N) showed a clearer deterioration: 34.4% in 2012, declining to 25.4% in 2015, recovering to 29.5% to 30.7% in 2017–2019, collapsing to 23.2% in 2020, and recovering incompletely to 28.5% by 2022. The 2022 value of 28.5% was approximately 6 percentage points below the 2012 baseline. Tunisia's BPO and business support sector—smaller than Morocco's to begin with—has progressively lost forward integration depth, a trajectory that suggests some or a combination of the gradual loss of European client relationships, the shift of European companies' outsourcing toward other locations, or a reorientation of the sector's output toward domestic demand. Any of these explanations would be structurally concerning, given N's potential role as a KS anchor.

The deterioration observed in N is also reflected in its FEXGR\_DVA performance. Declining or persistently low upstream participation indicates that Tunisia's administrative and support-services sector is losing its role both as an exporter to foreign final demand, and as a contributor to foreign production systems. This dual decline reinforces the conclusion that N has not developed into the structural anchor for KS that it represents in Morocco.

Enabling services forward integration follows a broadly similar declining pattern. The H sector aggregate fell from 49.0% in 2012 to 39.1% in 2015, recovering to 43.1% to 43.7% in 2017–2019, falling to 35.0% in 2020, and recovering to 42.7% by 2022, well below the 2012 starting point. Air transport (H51) was the notable exception: with FFD\_DVA of 91% in 2012—reflecting the near-total

international character of aviation demand—it fell to 76.3% in 2015 (Bardo/Sousse security shock), recovered to 80%–89% in 2016–2019, collapsed to 68.3% in 2020 (COVID-19), and recovered to 87.8% in 2022. The recovery trajectory for air transport is encouraging and confirms that Tunisia’s aviation connectivity is rebuilding after its double disruption. Financial services (K) recorded 25% in 2012, declining to 19.4% in 2022, a 5.6 percentage point retreat that suggests Tunisia’s financial sector, despite its GDP share growth, is not becoming more internationally oriented.

Among local services, accommodation and food services (I) provide the clearest narrative of Tunisia’s structural setbacks. Its FFD\_DVA fell from 24.1% in 2012 to 16.7% in 2015 (the Bardo and Sousse attacks are directly visible in this data), before a partial recovery to 22.6% to 26.3% in 2018–2019. COVID-19 then drove a collapse to 12.2% in 2020, with only a partial recovery to 15.1% by 2022, nearly 9 percentage points below the 2012 baseline. Tunisia’s tourism sector has been set back structurally by a sequence of shocks from which it has not yet fully recovered. Health services (Q), Tunisia’s medical tourism sector, recorded a similar pattern: 22.0% in 2012, disrupted by the security shocks to 14% to 15.6% in 2015–2016, recovering to 21.8–26.6% in 2018–2019, then collapsing to 11.0% in 2020, and recovering only to 13.8% by 2022. The Q recovery remains the most incomplete in the dataset, suggesting that Tunisia’s medical tourism sector—serving Libyan, Algerian, and sub-Saharan African patients—faces structural impediments to recovery that go beyond the COVID-19 shock alone.

Taken together, Tables 6 and 13 indicate that Tunisia’s forward GVC integration is weakening along both dimensions. FFD\_DVA shows declining engagement with foreign final demand across most sectors, while FEXGR\_DVA confirms limited, and in some cases deteriorating, participation as an upstream supplier in global production networks. This combination indicates a services economy that is progressively disengaging from international demand and production chains, reinforcing the broader pattern of structural retreat identified throughout the analysis.

## 9. INPUT-SIDE INTEGRATION AND UPSTREAM POSITIONING

Tables 12 and 13 add the input-side and upstream-positioning dimensions of GVC participation. They reveal a structural dynamic that EXGR\_DVA and FFD\_DVA alone cannot expose. They tell a story of initial advantage squandered: Tunisia began the period with KS firms importing foreign specialized intermediates at rates matching or exceeding EU15 levels—a structural inheritance from its historically deep professional and ICT ties with France and European markets. In the following decade, that advantage was eroded systematically across every KS sub-sector, while the EU15 equivalent rose steadily. By 2022, computer programming’s foreign input content had fallen to less than half the EU15 level, and professional services had surrendered almost its entire initial lead. Only administrative services retained a meaningful advantage. Transport moved in the opposite direction, with shipping and aviation deepening their import intensities. However, gains in operationally import-intensive infrastructure cannot substitute for retreat in the sectors with the highest knowledge-economy development potential.

The upstream positioning evidence compounds this picture. Despite Tunisia’s initially high foreign input sourcing in KS, its service sectors never became deeply embedded as intermediate inputs in other countries’ production chains. Computer programming’s upstream GVC participation stood at barely half the EU15 level in 2022, and well below Morocco’s, which exceeded the EU15 level. Professional services was closer but still below benchmark. Administrative services was the one exception, just crossing the EU15 threshold. Transport’s upstream participation actually declined over the decade.

The conjunction of these two findings is the main diagnosis in this paper. Tunisia imported foreign ICT and professional-services intermediates at EU15-equivalent rates in 2012, but those inputs did not lead to Tunisian services becoming embedded as productive inputs in global supply chains. Input openness and upstream positioning failed to connect. This disconnect appears to predate the political disruption of 2011, suggesting that the structural weakness is not solely a governance failure, but also a capabilities constraint that policy must address at its root.

## 10. DOMESTIC ECONOMY STRUCTURE: HR BACKWARD LINKAGES

Table 9's Hirschman–Rasmussen backward linkage indices indicate how intensively each sector draws on inputs from the wider domestic economy to generate a unit of value added. An index above 1.0 signals stronger-than-average upstream pull, whereas an index below 1.0 signals weaker-than-average pull. As discussed in the Framework Paper, computing these indices requires a country-specific input–output table (the Leontief inverse matrix), so we cannot use the EU15 as a benchmark and rely instead on U.S. data.

Tunisia's HR backward linkage indices in Table 9 reveal a domestic economic structure with meaningful differentiation between knowledge-intensive and logistics-oriented sectors, broadly consistent with patterns observed in Morocco and the U.S. benchmark. The overall range spans from approximately 0.70 (household services, T) to 1.19 (postal and courier services, H53 by 2022). The central finding is that KS sectors cluster modestly below the economy average, consistent with the knowledge-intensive character of their production, while most transport and logistics sectors are above average. Within KS, there is one notable distinction: J61 (telecommunications) and J58–60 (publishing and broadcasting) are above average throughout, driven by their more intensive use of domestic physical and network infrastructure, while J62–63, M, and N are below average.

The below-average pattern in core KS is consistent across J62–63, M, and N throughout the period. J62–63 (computer programming) records backward indices in the 0.919–0.977 range; M (professional services) in the 0.919–0.962 range; and N (administrative support) in the 0.918–0.968 range. These values are modestly below the economy average, reflecting the relatively limited domestic physical-intermediate purchases of knowledge-intensive production—whose primary inputs are human capital, software tools, and professional frameworks—and are broadly comparable with the U.S. benchmark range of 0.73–0.97 for equivalent KS sectors. Telecommunications (J61) is the structurally striking exception within KS: it records consistently above-average backward linkages (1.027–1.155), rising steadily to 1.155 by 2022. This reflects the intensive domestic infrastructure maintenance and content purchases of Tunisia's telecoms networks, which source capital goods, maintenance services, and locally produced content at above-average domestic rates. Financial services (K) records values broadly at or above the economy average (0.989–1.066), confirming that Tunisia's banking and insurance sector draws on domestic intermediate services—legal, IT, and professional inputs—at near- to above-average intensity.

Within enabling services, the transport sub-sectors display the above-average backward linkages expected for logistics-intensive operations. Air transport (H51) records consistently above-average backward linkage indices (1.038–1.184), with some decline from the 2017–2018 peak. Land transport (H49) starts at 1.057 in 2012 and holds broadly above average throughout the decade (1.003–1.085), confirming that Tunisia's road-freight sector maintains intensive domestic input relationships—fuel, vehicle maintenance, and support services—drawn predominantly from Tunisian suppliers. Warehousing (H52) is also consistently above average (1.038–1.080). Postal and courier services (H53) show the strongest upward trajectory in the entire backward linkage dataset, rising from 0.989 in 2012 to 1.192 by 2022—the highest value recorded by any services sector in Tunisia's data—reflecting the sector's growing dependence on domestic sorting, logistics, and delivery infrastructure as the regional parcel and e-commerce economy expands.

Water transport (H50) presents the most analytically interesting backward linkage trajectory within the transport group. It started at 0.983 in 2012, remained near the economy average through 2014–2016 (0.998–1.005), then declined progressively to 0.883 by 2022—moving from near-average to clearly below average. This shift is consistent with Tunisia’s port and maritime operations sourcing a growing share of their operational inputs—fuel, vessel maintenance, and cargo equipment—from international suppliers rather than domestic ones, a pattern that parallels the declining domestic content ratios in maritime exports documented in section 7. Among local services, accommodation and food services (I) records persistently above-average backward linkages (1.040–1.156), reflecting the intensive use of domestic food, beverage, and facility services by Tunisia’s hospitality sector. Real estate (L) and education (P) sit clearly below average at 0.813–0.878 and 0.831–0.883 respectively, consistent with their human-capital-intensive and asset-dependent production structures. Household services (T) records the lowest backward linkage indices in the dataset (0.699–0.771), structurally expected given its minimal formal intermediate input purchases.

## 11. DOMESTIC ECONOMY STRUCTURE: HR FORWARD LINKAGES

Table 10’s forward linkage indices reveal considerably more structural differentiation than the backward linkage data, and several sector-specific patterns bear important analytical weight for assessing Tunisia’s development trajectory. The distribution of forward indices in Tunisia spans a wider range than the backward indices—from approximately 0.66 to 1.71—creating a structural hierarchy of domestic supply chain centrality that is analytically informative, despite the deteriorating trends visible in several key sectors.

Administrative and support services (N) records the highest forward linkage indices within Tunisia’s KS group throughout the period: 1.340 in 2012, broadly stable in the 1.242–1.354 range across the decade, and 1.312 by 2022. These values—approximately 24%–35% above the economy average—confirm that Tunisia’s BPO and business-support sector is deeply embedded as an intermediate input supplier to domestic manufacturing, financial, retail, and public-sector clients. Tunisia’s N forward linkage (1.24–1.35) actually exceeds Morocco’s corrected equivalent range of 1.16–1.22 throughout the period, a structurally significant finding: despite Tunisia’s N sector being smaller in GDP-share terms than Morocco’s, it is more deeply wired into the domestic supply chain. This domestic embedding is N’s principal structural asset, even as its forward GVC integration declines.

Computer programming and information services (J62–63) presents the most structurally encouraging forward linkage trajectory in Tunisia’s KS data. Its index stood at 1.236 in 2012—well above the economy average—and has broadly maintained and modestly strengthened this position: 1.277 (2014), 1.252 (2016), 1.201 (2019), rising to 1.314 by 2022. J62–63’s forward linkage is the second highest in the KS group and has been above the economy average throughout the entire period. This means that Tunisia’s software and IT sector is not merely an export enclave: it supplies digital tools, platforms, and IT services to domestic financial, manufacturing, government, and commercial clients at an above-average rate. The 2022 value of 1.314 is the highest forward linkage that J62–63 has recorded, suggesting that domestic embedding has been deepening even as the sector’s export orientation has been maintained. This dual domestic-and-international character is analytically significant: it provides the structural foundation for the kind of KS anchoring role that the framework identifies as conducive to convergence.

Professional and technical services (M) recorded forward indices of 1.164 in 2012 and has held broadly stable at 1.096–1.174 throughout the decade, reaching 1.168 in 2022. M’s forward linkage has remained above the economy average throughout the period with only modest fluctuations, confirming that Tunisia’s engineering consultancies, technical advisory firms, and professional practices supply intermediate services to domestic sectors—construction, energy, public

administration, and corporate clients—at an above-average rate. This domestic embedding is the counterpart to M's internationally resilient FFD\_DVA: M's professional firms serve both domestic and foreign clients simultaneously, producing the dual orientation that the convergence framework identifies as structurally optimal. Telecommunications (J61) recorded forward indices consistently above the economy average throughout (1.082–1.237), confirming that Tunisia's telecoms infrastructure continues to supply intermediate connectivity inputs to businesses, government, and other service sectors at above-average rates. The 2022 value of 1.201, despite some year-to-year variation, indicates sustained domestic supply chain relevance.

Within enabling services, warehousing and support activities (H52) recorded above-average forward linkage indices throughout the period (1.356–1.446), the second-highest in the enabling services group, confirming that Tunisia's storage and logistics support infrastructure feeds into domestic supply chains—manufacturing zones, agricultural export networks, and cross-regional distribution—at consistently above-average rates. Land transport (H49) recorded forward indices modestly above the economy average (1.117–1.205), confirming its role as a domestic intermediate service supplier, though at a lower intensity than the paper's earlier draft had suggested. The most striking forward linkage trajectory in the entire dataset is postal and courier services (H53): rising from 1.493 in 2012 to 1.628 in 2019 and 1.711 by 2022—the highest forward linkage index in Tunisia's services economy by end-period. Tunisia's postal and courier network is an increasingly central domestic supply chain node, supplying delivery and distribution services to retailers, manufacturers, and households at a rate well above the economy average.

Financial services (K) recorded above-average forward linkage indices throughout: 1.194 in 2012, with some variation, declining to a trough of 1.050 in 2015 before recovering to 1.132 in 2022. The persistently above-average value confirms K's role as a pervasive credit and payment intermediary, providing services that feed into virtually every sector of the domestic economy. The 2015 trough is consistent with financial sector stress during the mid-decade disruption period. Water transport (H50) records below-average forward linkage indices throughout the period (0.881–0.957), with some oscillation but no sustained upward trend. Tunisia's port and maritime operations supply services as a domestic intermediate input at below-average rates, reflecting the sector's more limited domestic supply chain footprint compared with its backward linkage relationships. Air transport (H51) similarly records below-average forward indices (0.772–0.877), consistent with aviation's character as a predominantly final-demand sector: international passenger and cargo flows generate limited intermediate supply relationships within the domestic economy beyond airport services.

Wholesale and retail trade (G) records forward linkage indices near but slightly below the economy average throughout the period (0.930–0.987 across the decade, rising modestly to 0.977 by 2022). This places Tunisia's distribution sector at or just below the economy-wide average as a domestic intermediate supplier, reflecting a distribution network that services predominantly final consumers rather than other producing sectors. The remaining local services sectors present a uniformly below-average forward linkage picture: accommodation and food services (I) records 0.754–0.847; real estate (L) 0.714–0.788; public administration (O) 0.703–0.762; education (P) 0.681–0.736; health (Q) 0.659–0.729; and household services (T) 0.655–0.726. These values are structurally expected: LS sectors deliver their output overwhelmingly to final consumers rather than to other producing sectors.

Taken together, Tunisia's forward linkage structure presents a more encouraging picture than the backward linkage data alone would suggest. N, J62–63, J61, M, H52, H53, and K all maintain above-average domestic forward linkages, confirming that Tunisia has built a services economy in which knowledge-intensive and logistics sectors are genuinely embedded as intermediate suppliers to the rest of the domestic production system. The structural concern—and the counterpart to the GVC deterioration documented in section 8—is that this domestic embedding has not translated into rising international market penetration for most sectors. M and J62–63 are the exceptions: both

maintain above-average domestic forward linkages while also preserving meaningful international forward integration. It is this combination—domestic depth and international orientation simultaneously—that the framework identifies as the hallmark of the most structurally promising KS development path. That Tunisia’s two leading KS sub-sectors both exhibit this dual character is the strongest structural asset the data reveal.

## 12. EMPLOYMENT STRUCTURE AND EXTERNAL DEMAND LINKAGES

Tables 2 and 3 document the labor-market dimensions of Tunisia’s services economy over 2012–2022. Total employment rose from 3.36 million to 3.58 million workers—a modest 6.6 % over the decade, well below the pace needed to absorb a rapidly growing labor force. Structural transformation at the broad-sector level was services-led: agriculture shed workers (its share falling from 16.5 % to 13.5 % of total employment), while the services aggregate expanded from 51.6 % to 54.4 %. Manufacturing’s employment share held essentially flat at 17.4–18.3 %, confirming that Tunisia’s labor-market transformation over the decade was driven by services absorption rather than by industrial deepening.

Within services, the employment composition story is more revealing than the aggregate share. Knowledge services (KS) accounted for 6.04 % of total employment in 2012 and edged up to 6.45 % by 2022—a slight proportional improvement that stands in stark contrast to the declining KS GDP share documented in section 3. The divergence between a rising employment share and a falling value-added share is a direct measure of declining KS productivity, as discussed further below. Within KS, professional and technical services (M) registered the clearest employment gain, rising from 1.35 % to 1.60 % of total employment, consistent with the sector’s demonstrated resilience in the GVC indicators. Administrative and support services (N) also expanded its employment share modestly, from 1.11 % to 1.33 %. Telecommunications (J61) declined from 1.81 % to 1.72 %, mirroring its falling GDP share, while computer programming (J62–63) held at approximately 1.38%–1.61% (peaking in 2015 before contracting)—consistent with the sector’s resilient forward integration profile.

Enabling services employment held broadly steady at 8.33–8.42 % of total employment. Transport and storage (H) remained the dominant sub-component at around 7.4 %, consistent with its large GDP share. Financial services (K) expanded its employment share modestly from 0.93 % to 1.04 %, mirroring its rising GDP share. Within local services, the most important structural development was the expansion of public administration’s employment share from 8.69 % to 8.99 %, which, taken together with its GDP share expansion documented in section 5, confirms that the public-sector expansion of the post-revolution decade was a genuine labor-market absorber—and a persistent one. Education (P) remained broadly stable at 6.7–6.8 %, and health (Q) rose slightly from 3.86 % to 4.33 %, reflecting gradual expansion of Tunisia’s health workforce.

Table 4 reports value added per worker by sector in thousands of USD. The data reveal a productivity hierarchy that is structurally informative, but also a decade-long deterioration in the KS sectors that are the most strategically important. Financial services (K) stands out as the productivity leader at USD 51,900 per worker in both 2012 and 2022—a level that is remarkably stable and the highest of any services sector in Tunisia’s dataset. Professional and technical services (M) was the second-most productive KS sector in 2012 at USD 30,600 per worker, but declined sharply to USD 23,200 by 2022. Administrative and support services (N) followed a similar trajectory, falling from USD 27,200 to USD 20,700. Both declines outpace the currency and price effects of the period and are consistent with the structural finding that employment in M and N has grown faster than the value added these sectors generate—a pattern of employment-led dilution rather than productivity-led expansion.

Telecommunications (J61) records USD 24,200 per worker in 2012, declining to USD 21,200 by 2022, while computer programming and information services (J62–63) is the lowest-productivity KS sub-sector at USD 12,500 falling to USD 11,800—a level that reflects the early-career and low-end-outsourcing composition of Tunisia’s IT workforce, rather than the advanced software-product or high-margin consultancy activities that characterise the EU15 equivalent. Real estate (L) shows an anomalously high value added per worker figure (around USD 305,000 in 2012, declining to USD 232,000 in 2022) that is entirely a statistical artifact: imputed rents dominate L’s value added while its formal employment is minimal, so the ratio inflates. This figure should not be interpreted as genuine sectoral productivity.

Tables 7 and 8 track the employment embodied in exports (EXGR\_DEM) and in foreign final demand (FFD\_DEM) as shares of each sector’s total employment. These indicators provide the labor-market counterpart to the FFD\_DVA evidence in section 8, identifying not only how much value reaches foreign consumers but how many jobs depend on doing so.

Professional and technical services (M) produces the most structurally significant employment-in-demand result in Tunisia’s dataset. Its FFD\_DEM stood at 38.3 % in 2012 and recovered to 38.9 % by 2022, after falling to 29.6 % in the COVID-19 year 2020 and 33.6 % in the 2015 security-shock year. This near-perfect recovery in the employment dimension precisely mirrors the FFD\_DVA resilience documented in section 8 and confirms that M’s international market relationships support a substantial and structurally stable share of the sector’s jobs. EXGR\_DEM for M also shows a slight improvement from 30.6 % to 32.4 %, a positive signal that M’s employment is becoming modestly more export-linked over time.

Computer programming and information services (J62–63) displays the most encouraging employment-in-demand trajectory within the ICT cluster: EXGR\_DEM rose from 18.4 % to 22.1 % over the decade, and FFD\_DEM held broadly stable at 34.7–33.5 %. This improvement in export-linked employment for J62–63 is consistent with the sub-sector’s resilient FFD\_DVA and indicates that its international client relationships are supporting a growing share of IT workers. The broader J aggregate tells a less positive story: J’s FFD\_DEM fell from 33.2 % to 26.6 %, dragged down by the declining EXGR\_DEM of telecommunications (J61).

Administrative and support services (N) shows a concerning deterioration. Its FFD\_DEM fell from 34.4 % in 2012 to 28.5 % in 2022, and EXGR\_DEM fell more sharply still, from 16.1 % to 13.2 %. The implication is that a declining share of N’s workforce is supported by either export demand or foreign final demand—consistent with the structural diagnosis in section 8 of a BPO sector losing European client relationships and reorienting toward domestic demand.

Enabling services display the expected high foreign-demand exposure of internationally oriented infrastructure. Air transport (H51) records EXGR\_DEM values exceeding 100 % throughout the period (141.1 % in 2012, 110.6 % in 2022). Values above 100 % arise because the OECD TiM methodology captures employment in the full supply chain supporting each sector’s exports, including indirect upstream jobs; they should not be interpreted as more than 100 % of H51’s direct workforce but rather as evidence that H51’s export activity sustains more than one job elsewhere in the economy for each direct job within the sector. FFD\_DEM for H51 declined from 91.0 % to 87.8 %, confirming aviation’s near-total dependence on international demand. The broader transport aggregate (H) saw its FFD\_DEM fall from 49.0 % to 42.4 %, reflecting the partial post-COVID recovery shortfall in international freight and passenger volumes. Accommodation and food services (I) records the sharpest employment-in-demand contraction in the dataset: FFD\_DEM fell from 24.1 % in 2012 to 15.1 % by 2022, capturing the full structural damage done to Tunisia’s tourism workforce by the 2015 security shocks and the COVID-19 pandemic. The 2022 value has not recovered to its 2012 level, confirming that a portion of the pre-shock foreign-demand employment base in hospitality has been permanently lost.

Table 11's employment multipliers—measured in thousands of jobs per million USD of final demand—reveal which sectors generate the most economy-wide employment per unit of spending. Education (P) registers 0.071–0.076 thousand jobs (71–76 jobs) per million USD, among the highest genuine multipliers in the economy. Human health (Q) appears to record anomalously high multipliers (around 1.0 thousand jobs per million USD) that reflect the same statistical artifact as the value-added-per-worker data for that sector: the TiVA Q classification captures only formal private health value added, while the TiM employment data for Q include the large public and quasi-public health workforce. Within the analytically relevant KS group, the most important multiplier signals are directional. N's multiplier rose from 0.035 to 0.044 and M's from 0.033 to 0.041 over the decade—the steepest proportional increases in the KS cluster, consistent with employment growing faster than value added in both sectors. J62–63's multiplier rose from 0.066 to 0.075, indicating growing economy-wide employment creation per unit of IT demand. Financial services (K) records the lowest KS multiplier at 0.025–0.024, reflecting its capital-intensive, high-productivity character. Land transport (H49) at 0.050–0.047 and postal and courier services (H53) at 0.066–0.077 generate meaningful enabling-sector employment per unit of demand, confirming the logistical backbone's role as a domestic employment sustainer as well as a production system node.

### **13. DOMESTIC ECONOMY EFFICIENCY: VALUE-ADDED MULTIPLIERS, LABOR INCOME SHARE, AND LABOR INCOME MULTIPLIERS**

Three additional indicators complete the structure of Tunisia's services economy: the value-added multiplier (Table 14), the labor income share (Table 15), and the labor income multiplier (Table 16). Together they capture how efficiently final demand generates domestic income, how that income is distributed between labor and capital, and how much of any additional unit of demand flows ultimately to workers across the economy's supply chain.

Table 14's value-added multipliers measure the total domestic value added—wages plus profits plus net taxes—generated per unit of final demand through the full domestic supply chain. Real estate (L) records the highest value-added multipliers in the services economy, at 0.943–0.953 throughout the period, reflecting the predominantly domestic composition of its output and the artifact discussed earlier: imputed rents dominate the value added of this sector while its formal employment is minimal. Education (P) and financial services (K) both maintain high multipliers in the 0.870–0.936 range, consistent with their limited reliance on imported intermediate inputs. Knowledge services multipliers are moderate: J62–63 rises from 0.869 to 0.915 and M from 0.868 to 0.890, while N ranges from 0.854 to 0.867. The upward trend in KS multipliers over the period is consistent with declining foreign-input use (rising EXGR\_DVA), but, as established in section 9, reflects import compression rather than structural upgrading.

Transport sub-sectors show structurally lower value-added multipliers because of their higher import content for fuel, equipment, and operations. Water transport (H50) declines from 0.580 to 0.490, and air transport (H51) falls from 0.723 to 0.630—the two lowest services multipliers in the dataset—confirming that Tunisia's maritime and aviation sectors deliver a diminishing share of each spending dollar as domestic income. Land transport (H49) also declines from 0.781 to 0.694, consistent with growing dependence on imported fuel and vehicles even as it deepens its domestic supply chain role. This pattern is the inverse of the forward-linkage evidence: H49 supplies inputs to the domestic economy at above-average rates (high forward linkage), but retains a declining share of each demand unit as domestic value added (falling VA multiplier). The combination points to a sector that is structurally central to the domestic production network but increasingly expensive in import content.

Table 15's labor income share—the ratio of employee compensation to total value added—reveals the distributional structure of Tunisia's services economy. Education (P) records the highest and most stable labor share at 0.915–0.917, reflecting the labor-intensive, low-capital nature of educational service delivery. Public administration (O) maintains a high and rising share of 0.636–0.703, consistent with the government wage structure. Among KS sectors, J62–63 records the highest and most strongly rising labor share, increasing from 0.545 in 2012 to 0.634 in 2022. This upward trend suggests that the gains from computer programming and IT services in Tunisia are flowing disproportionately to workers rather than to capital owners—a structurally inclusive pattern, though one that also reflects the sector's relatively modest capital requirements. N's labor share rose from 0.531 to 0.567, and M's from 0.487 to 0.519—both above 0.5 and trending upward, indicating that workers in these sectors are capturing a rising fraction of value added despite the overall decline in productivity per worker documented in Table 4. The explanation is that declining VA per worker is distributed increasingly toward labor, suggesting that capital returns in M and N are being compressed under macroeconomic pressure.

Telecommunications (J61) records the lowest labor share among KS sectors at 0.256–0.297, reflecting the capital and spectrum intensity of network infrastructure. Real estate (L) has a labor share of only 0.040–0.047, by far the lowest in the economy, which is structurally expected: L's value added is dominated by imputed rents on owned residential and commercial property rather than by employee compensation. Wholesale and retail trade (G) also records a below-average labor share of 0.159–0.187, consistent with a sector where margins are compressed and wage levels are low, despite its role as the domestic economy's largest employment node.

Table 16's labor income multipliers—the total labor income generated per unit of final demand through the full supply chain—combine the distributional and efficiency dimensions. Education (P) produces the highest labor multiplier at 0.789–0.819, driven by both its high labor share and strong domestic value retention. Public administration (O) records 0.505–0.572, reflecting high labor share and high domestic content. Within KS, J62–63 registers the sharpest upward trend, rising from 0.453 to 0.562—the steepest increase among all services sectors—driven by both a rising labor share and improving domestic value multiplier. This is a positive structural signal: each unit of demand directed at Tunisia's computer programming and IT sector generates a growing amount of worker income across the economy, making J62–63 an increasingly inclusive as well as economically dynamic sector. M records 0.416–0.455 and N records 0.435–0.475, both rising modestly and above K's 0.391–0.439, confirming that the professional and business services cluster distributes more labor income per unit of demand than finance—a pattern consistent with K's higher capital intensity. Land transport (H49) and accommodation and food services (I) record labor multipliers of 0.370 and 0.242–0.271 respectively, confirming their role as labor-income generators for lower-wage workers in the domestic economy. The central structural implication is that J62–63 and M are not only the most strategically important KS sectors for export and GVC integration, but also the ones generating the largest and fastest-growing labor-income spillovers per unit of demand. Scaling these sectors would therefore simultaneously advance Tunisia's GVC integration objectives and its inclusive growth goals, making the case for their prioritization doubly compelling.

## 14. COMPARISON AGAINST THE EU15 BENCHMARK

The EU15 benchmark reveals, for Tunisia, a structural gap that is simultaneously deeper and more complex than the simple share comparison suggests. In GDP composition, the 5 to 7 percentage point KS gap is widening, given Tunisia's declining KS shares against the EU15's rising shares. But the more diagnostically important gap is in the indicators that measure structural dynamism, rather than structural level: forward integration, backward linkage differentiation, and domestic supply chain evolution.

On forward GVC integration, the EU15 benchmark for knowledge services FFD\_DVA—ranging from 18% to 27% across the reference period for the leading KS sub-sectors—actually lies below Tunisia’s 20% to 39% range in 2022. This reflects the structural reality established throughout this analysis: EU15 KS sectors serve large domestic markets and therefore export only a modest share of their output to foreign final consumers, while small North African economies necessarily send the majority of their KS output abroad. The analytically important finding is therefore not a gap with EU15 but the declining trend within Tunisia itself: the share of Tunisian KS output reaching foreign final demand fell in most sub-sectors over the decade. It is this domestic retreat—not a gap with EU15 levels—that is the structural signature of a diverging development trajectory: Tunisia’s KS sectors are losing the international market orientation that would allow them to generate the foreign exchange, scale economies, and quality benchmarking that convergence requires.

The backward linkage comparison is equally instructive. The EU15 benchmark shows clear sectoral differentiation: KS sectors with below-average backward indices (0.80–1.00 in U.S. benchmarks), reflecting globally specialized input sourcing; enabling services with sector-specific patterns, reflecting GVC embeddedness or domestic intensity. Tunisia displays meaningful but moderate backward linkage differentiation, spanning from approximately 0.70 (household services, T) to 1.19 (postal and courier services, H53 in 2022). KS sectors (J62–63, M, N) cluster modestly below average at 0.92–0.97, while transport and logistics sectors are above average. This is broadly consistent with patterns in Morocco and Egypt, reflecting the knowledge-intensive versus logistics-intensive character of production, though the spread is narrower than in high-income economies. But the absence of differentiation confirms that none of the three North African countries has yet developed the domestic knowledge economy supply chain that is a necessary complement to internationally oriented KS sectors.

On domestic economy forward linkages, Tunisia compares favorably to both Morocco and Egypt in the enabling services category. Tunisia’s land transport forward indices of 1.12–1.19 are above the economy average and exceed Morocco’s corrected equivalent range of approximately 0.85–0.94, confirming a more domestically embedded character. Tunisia also holds its own in KS forward linkages, despite the declining trend. But the sustained above-average forward linkages in Tunisia’s KS sectors (M at 1.10–1.39, N at 1.06–1.21) have not translated into rising FFD\_DVA, revealing the structural disconnect at the core of Tunisia’s services economy: sectors that are domestically embedded as intermediate input suppliers have not leveraged that domestic depth to build internationally competitive export capabilities. The causal link between domestic supply chain centrality and international market orientation—which is strong in the EU15—is weak in Tunisia.

The employment and productivity benchmark comparison with the EU15 now completes the structural picture for Tunisia. Groups 3 and 4 of the analytical framework—employment structure, external demand linkages, productivity, and employment multipliers—are available from the 2025 TiM database and are discussed in sections 12 and 13 above. Tunisia’s KS employment share of approximately 6.0–6.5 percent of total employment is substantially below the EU15 reference of 16–18 percent, and KS productivity per worker—ranging from about USD 11,800 for computer programming to USD 23,200 for professional services in 2022—is well below high-income economy benchmarks. The employment comparison reinforces rather than moderates the structural gaps identified through the value-added and linkage indicators.

## 15. SYNTHESIS: TUNISIA’S STRUCTURAL POSITION AND DEVELOPMENT TRAJECTORY

Drawing together the evidence across all tables, Tunisia’s services sector has the most structurally fragile trajectory of the three North African economies examined in this study. While Tunisia entered the period with the strongest initial knowledge services base, its subsequent evolution has been characterized by stagnation and, in several dimensions, structural retreat.

Reading the evidence through the series' four structural groups sharpens this diagnosis. On Group 1 (GVC participation), Tunisia's defining feature is directional: where Morocco's forward integration indicators rose across knowledge services over the decade, Tunisia's declined. The J aggregate lost nearly 8 percentage points of FFD\_DVA over the period; N lost approximately six; K lost over five. The principal exceptions were M, which demonstrated shock-resilient stability, and J62–63, which preserved its 2012 baseline. These two sub-sectors carry the heaviest weight in any recovery scenario. FEXGR\_DVA evidence further confirms the picture: Tunisia is simultaneously losing direct access to foreign final markets, and its role as an upstream intermediate supplier in global production chains.

On the input side, EXGR\_FVA confirms that the post-2017 rise in domestic content ratios (EXGR\_DVA) reflects foreign exchange constraints and import compression, rather than structural upgrading. The complement indicator moves in the direction of disintegration, not deepening. On Group 2 (domestic production linkages), Tunisia's story is more nuanced. Its domestically oriented logistics backbone—land transport and warehousing with forward linkages roughly double the economy average—is a genuine structural asset, compared to Morocco. Knowledge services maintain above-average domestic forward linkages throughout, even as those linkages trend downward. GDP composition deteriorates as public administration expands and knowledge services contract. On Groups 3 and 4 (employment structure and productivity), the 2025 TiM data now available for Tunisia confirm a pattern of structural weakness consistent with the GVC and linkage evidence. KS employment accounts for roughly 6.0–6.5 percent of total employment—barely more than one-third of the EU15 benchmark of 16%–18%—while productivity per worker in key KS sectors has declined substantially over the decade, particularly in M and N. The employment data thus corroborate the value-added diagnosis rather than qualifying it.

Compared with Morocco and Egypt, Tunisia stands out not for weak initial capabilities, but for the erosion of those capabilities over time. Morocco has demonstrated progressive integration into GVCs and expanding knowledge services dynamism, while Egypt exhibits a more stable, if segmented, structure. In Tunisia, by contrast, both forward integration and broader GVC participation weakened systematically over the decade, making it the clearest example among the three countries of interrupted services-led development.

Across all seven tables, Tunisia's services sector presents the most structurally ambiguous profile among the three North African economies. It is a country of genuine capabilities. It has the largest ICT sector in relative terms, a resilient professional services base, deeply embedded logistics infrastructure, a growing financial sector, and specialized medical and technical tourism niches. But it has spent a decade suffering from structural deterioration, rather than making structural advances across the majority of its forward-looking indicators. The synthesis that follows attempts to capture both the genuine capabilities and the mechanisms of this erosion.

The combined evidence from EXGR\_DVA, EXGR\_FVA, FFD\_DVA, and FEXGR\_DVA provides a more complete characterization of Tunisia's structural trajectory. On the input side, rising EXGR\_DVA and declining EXGR\_FVA during key periods reflect a reduction in foreign input integration, rather than upgrading. On the output side, declining FFD\_DVA and weak FEXGR\_DVA indicate that Tunisian services sectors are losing both direct access to foreign final markets, and their role as upstream suppliers in global production chains. This dual pattern confirms that Tunisia's services economy is not merely stagnating but, in important respects, is becoming less integrated into GVCs.

The EU15 benchmark adds the temporal dimension that makes Tunisia's trajectory distinctive among the three countries: in 2012, Tunisia's KS sectors were importing foreign specialized intermediates at rates at or above EU15 levels—an initial structural advantage that neither Egypt nor Morocco possessed. Yet by 2022, that advantage had been largely surrendered across every KS sub-sector, except administrative services, while the EU15 benchmark rose throughout. On upstream positioning, J62–63's participation in other countries' production chains stands at barely half the EU15 level and

well below Morocco's, confirming that Tunisia's initial input openness never converted into the deep GVC embedding that would have generated durable competitiveness.

The most important single finding is the divergence between Tunisia's strong backward linkage homogeneity and its deteriorating forward integration. On the backward side, Tunisia's services sectors are embedded in the domestic economy at broadly average rates. They neither pull intensively from globally specialized inputs, nor withdraw from domestic supply chains. On the forward side, most KS and enabling services sectors are delivering a declining share of their output to foreign final consumers. This combination defines a services economy that is domestically integrated but internationally retreating, precisely the opposite of the structural direction that the three-category framework identifies as the convergence pathway. An economy on the convergence path would show KS forward integration rising (accessing foreign final markets at increasing rates), even as backward linkages begin to diverge downward (sourcing from globally specialized inputs). Tunisia shows the reverse.

The one sector that most clearly defies this dominant pattern is professional and technical services (M). Its FFD\_DVA stability at 38% to 39%—declining only during discrete shock episodes, and recovering fully by 2022—combined with an above-average and persistent forward linkage (1.10–1.39), represents the structural profile that the framework identifies as the most promising for KS-led convergence: internationally oriented with domestic depth. If Tunisia is to build a services-led development trajectory, M is the most natural starting point. It has demonstrated international market resilience that N has not, domestic embedding that J62–63 is only beginning to develop, and a geographic and language position—Francophone Africa and the Mediterranean—that creates a natural demand base for engineering, technical, and advisory services.

J62–63 (computer programming and information services) is the second-most-promising structural anchor. Its FFD\_DVA has proven more resilient than the J aggregate, its GDP share is the largest of the three countries for this sub-sector, and its forward linkage has been rising since 2015, suggesting an emerging dual orientation of domestic embedding and international export, which M already demonstrates more fully. The gap between Tunisia's J62–63 FFD\_DVA of 33.5% and Morocco's equivalent of 90.5% is enormous and cannot be closed quickly, but the directional signals suggest that this is the sub-sector most likely to drive KS expansion if supportive conditions, including digital infrastructure investment, improved investment climate, and stable governance, are established.

The structural deterioration in the remaining KS indicators—declining N FFD\_DVA, falling J and J61 forward integration, declining N FFD\_DVA—is the legacy of a decade of macroeconomic instability, political disruption, and underinvestment. These trends are not irreversible: M's resilience demonstrates that international market relationships can be maintained under adverse conditions when the sector's capabilities are deep enough. But reversing the broader KS deterioration requires the macroeconomic and institutional stabilization that the data period does not yet show. Tunisia's structural challenge is not the absence of foundational capabilities, which it demonstrably possesses, but the absence of the enabling conditions that would allow those capabilities to be scaled and internationally leveraged. This is precisely the enabling environment dimension of the big-push argument that the framework is designed to make: point interventions in individual KS sectors are insufficient without the coordinated macroeconomic, institutional, and infrastructure investments that lower the cost of international market participation across the whole sector.

A final observation concerns the structural comparison between Tunisia and Morocco that the data reveal most sharply. Both countries began the 2012–2022 period with broadly similar KS GDP shares and comparable forward integration levels. But their trajectories diverged dramatically along the dimension that matters most for convergence — international market orientation. Morocco's J62–63 reached 90.5% FFD\_DVA by 2022, while Tunisia's held at 33.5%; Morocco's M rose to 68.1%, while Tunisia's remained at 38.9%; Morocco's N rose from 41.7% to 51.8% FFD\_DVA, while Tunisia's retreated from 34.4% to 28.5%.

The forward linkage data add an important nuance to this picture: Tunisia's N sector (1.34→1.31) has remained more deeply embedded in the domestic supply chain than Morocco's (1.16–1.22) throughout the period, suggesting that Tunisia's BPO sector has preserved domestic depth even as it has lost international reach. But domestic embedding without international orientation is precisely the structural trap the framework is designed to diagnose. The divergence between the two countries is therefore not explained by their starting positions — Tunisia entered 2012 with competitive advantages in ICT scale and logistics infrastructure — but by the compounding effect of Morocco's sustained investment in KS internationalization, anchored by the Casablanca Nearshore ecosystem and pan-African professional services networks, contrasted with Tunisia's compounding retreat from international markets under political and economic instability. The data document not a gap but a widening, and it is widening along the forward integration dimension that the framework identifies as the convergence pathway. Reversing that widening is the most urgent structural priority that this analysis identifies for Tunisia's services development policy.

## DATA SOURCES

All quantitative data in this paper are drawn from three OECD databases, accessed in April 2026. Sectoral value-added shares, the EXGR\_DVA (domestic value-added share in gross exports), and FFD\_DVA (domestic value added reaching foreign final demand) indicators are from the OECD Trade in Value Added (TiVA) database: <https://www.oecd.org/en/topics/sub-issues/trade-in-value-added>. Employment data are from the OECD Trade in Employment (TiM) database: <https://www.oecd.org/en/data/datasets/trade-in-employment>. Input-output data are from OECD Input-Output tables: <https://www.oecd.org/en/data/datasets/input-output-tables.html>. Hirschman–Rasmussen backward and forward linkage indices are computed from Tunisia's input-output tables, following the methodology described in the companion Framework Paper. All calculations are the author's own; computational code is available upon request.

## REFERENCES

Dinh, H. T. (2026). *A Framework to Assess Services as a Driver for Economic Growth and Structural Transformation*. RP-02/26. Policy Center for the New South, March 2026.

OECD (2025). *Trade in Value Added (TiVA) Database, 2025 edition*. <https://stats.oecd.org> (accessed April 12, 2026).

OECD (2025). *Trade in Employment (TiM) Database, 2025 edition*. <https://stats.oecd.org> (accessed April 12, 2026).

OECD (2025). *Guide to OECD Trade in Value Added (TiVA) Indicators, 2025 edition*. OECD Publishing, Paris.

## ANNEX 1

### INDICATORS USED IN THE ANALYSIS

To capture the multiple dimensions of services-led development, this study employs a unified set of sixteen quantitative indicators derived from the OECD Trade in Value Added (TiVA), Trade in Employment (TiM), and input–output databases. These indicators are designed to provide a comprehensive and internally consistent assessment of how service sectors contribute to global value chain (GVC) participation, domestic economic linkages, employment generation, and productivity.

1. The first group of indicators captures GVC participation and value-added trade structure.

- **EXGR\_DVA** (domestic value added in gross exports) measures the domestic content of exports, and indicates the extent to which sectors rely on local versus foreign inputs.
- **EXGR\_FVA** (foreign value added in exports) is the counterpart to EXGR\_DVA, and captures the degree of input-side integration into global production networks through the use of imported intermediates.
- **FFD\_DVA** (domestic value added in foreign final demand) measures how much of a sector's value added ultimately reaches foreign consumers, providing a direct indicator of forward integration into global demand chains.
- **FEXGR\_DVA** (domestic value added embodied in foreign exports) captures upstream participation in GVCs by identifying the extent to which a country's services are used as intermediate inputs into other countries' exports.

Together, these four indicators provide a complete picture of GVC integration, distinguishing between input-side integration (EXGR\_FVA), output-side integration (FFD\_DVA), upstream positioning (FEXGR\_DVA), and domestic value retention (EXGR\_DVA).

2. The second group of indicators captures **domestic production structure and inter-sectoral linkages** using input–output analysis.

- Shares of services in GDP.
- The **Hirschman–Rasmussen backward linkage index** measures the extent to which a sector draws on inputs from the domestic economy, indicating its demand for local supply chains.
- The **Hirschman–Rasmussen forward linkage index** measures how intensively a sector supplies intermediate inputs to other sectors, capturing its role as a provider of essential services within the domestic production network.

These linkage indicators are critical to distinguish between sectors that are deeply embedded in the domestic economy, and those that operate as isolated export enclaves.

3. The third group of indicators captures **employment structure and labor-market linkages**.

- **Sectoral employment** shares of labor across main sectors of the economy.
- **Sectoral employment shares** measure the distribution of labor across service categories.
- **EXGR\_DEM** (employment embodied in exports) identifies how much employment is supported by export demand.
- **FFD\_DEM** (employment embodied in foreign final demand) captures the extent to which jobs are sustained by foreign consumers, providing a labor-market counterpart to FFD\_DVA.

These indicators allow the analysis to connect value-added structures to employment outcomes, identifying which sectors generate jobs and how those jobs are linked to global demand.

**4. The fourth group captures productivity and employment impact.**

- **Value added per worker** measures sectoral productivity and provides a direct indicator of income-generation potential.
- **Leontief employment multipliers** measure the total number of jobs (direct and indirect) generated by an increase in final demand in each sector, capturing economy-wide employment spillovers.
- **Value added multipliers** measure the total domestic value added generated throughout the economy per unit of final demand for the sector's output. Like the employment multiplier it is derived from the Leontief inverse, but weighted by the value-added content at each stage of production rather than employment intensity.
- **Labor income shares** measure the fraction of sectoral value added paid out as compensation to workers — wages, salaries, and employer social contributions — expressed as a proportion of total value added.
- **Labor income multipliers** combine the value-added multipliers with the labor income shares (above) and measure the total labor income generated throughout the economy per unit of final demand for the sector. It is therefore a comprehensive indicator of the sector's contribution to household income, capturing both the breadth of domestic linkages and the extent to which those linkages generate wages rather than profits.

Taken together, these sixteen indicators form a coherent analytical system that permits a multidimensional assessment of service sectors. They enable the identification of sectors that are not only integrated into global markets, but also capable of generating domestic linkages, employment, and productivity growth. This integrated measurement framework underpins both the classification of services into knowledge, enabling, and local categories, and the comparative analysis across countries.

*Note: All sixteen indicators are available for all three North African country studies (Egypt, Morocco, and Tunisia), using the OECD TiM 2025 edition for employment-related indicators (Tables 2, 3, 4, 7, 8, and 11) and the OECD TiVA and ICIO 2025 editions for the remaining indicators. Three indicators—Value-Added Multipliers (Table 14), Labor Income Share (Table 15), and Labor Income Multipliers (Table 16)—are derived using the domestic Leontief inverse and OECD ICIO value-added component data.*

## ANNEX 2

**Table 1** Tunisia: Services Shares (%) of GDP, 2012-2022

ANALYSIS BY GROUPS	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Knowledge Services</b>	<b>10.68%</b>	<b>10.76%</b>	<b>10.62%</b>	<b>10.65%</b>	<b>10.66%</b>	<b>10.20%</b>	<b>10.23%</b>	<b>10.22%</b>	<b>10.06%</b>	<b>10.03%</b>	<b>10.18%</b>
Information and communication (J)	5.15%	5.19%	5.14%	5.12%	5.13%	4.95%	4.86%	4.86%	4.77%	4.77%	4.83%
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	0.44%	0.44%	0.44%	0.43%	0.43%	0.45%	0.46%	0.46%	0.45%	0.45%	0.46%
Telecommunications (J61)	3.38%	3.37%	3.36%	3.34%	3.34%	3.19%	3.02%	3.01%	2.96%	2.95%	3.00%
Computer programming, consultancy, and information service activities (J62-63)	1.33%	1.38%	1.34%	1.35%	1.35%	1.32%	1.39%	1.39%	1.36%	1.36%	1.38%
Professional, scientific and technical activities (M)	3.20%	3.20%	3.18%	3.18%	3.18%	3.02%	3.08%	3.08%	3.03%	3.02%	3.07%
Administrative and support service activities (N)	2.34%	2.37%	2.30%	2.35%	2.35%	2.23%	2.29%	2.29%	2.25%	2.24%	2.28%
<b>Enabling Services</b>	<b>12.25%</b>	<b>12.12%</b>	<b>12.01%</b>	<b>11.82%</b>	<b>12.02%</b>	<b>12.53%</b>	<b>12.93%</b>	<b>13.09%</b>	<b>12.87%</b>	<b>12.87%</b>	<b>13.01%</b>
Transportation and storage (H)	8.51%	8.20%	8.03%	7.79%	7.84%	8.14%	8.45%	8.61%	8.47%	8.47%	8.54%
Land transport and transport via pipelines (H49)	4.35%	4.16%	4.04%	4.00%	4.01%	4.13%	4.39%	4.51%	4.45%	4.44%	4.48%
Water transport (H50)	0.31%	0.31%	0.30%	0.31%	0.29%	0.29%	0.30%	0.31%	0.31%	0.31%	0.31%
Air transport (H51)	0.49%	0.47%	0.45%	0.42%	0.40%	0.43%	0.43%	0.44%	0.44%	0.44%	0.44%
Warehousing and support activities for transportation (H52)	2.38%	2.29%	2.27%	2.08%	2.16%	2.33%	2.38%	2.40%	2.35%	2.35%	2.38%
Postal and courier activities (H53)	0.99%	0.98%	0.97%	0.98%	0.97%	0.96%	0.95%	0.94%	0.93%	0.93%	0.94%
Financial and insurance activities (K)	3.75%	3.92%	3.98%	4.03%	4.18%	4.39%	4.48%	4.48%	4.39%	4.40%	4.46%
<b>Local Services</b>	<b>35.36%</b>	<b>35.97%</b>	<b>36.31%</b>	<b>36.82%</b>	<b>37.75%</b>	<b>37.90%</b>	<b>36.91%</b>	<b>37.27%</b>	<b>38.63%</b>	<b>38.07%</b>	<b>37.77%</b>
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	8.57%	8.76%	8.87%	9.20%	9.19%	9.25%	9.47%	9.55%	9.38%	9.37%	9.50%
Accommodation and food service activities (I)	4.55%	4.52%	4.50%	4.42%	4.45%	4.51%	4.82%	4.69%	4.50%	4.59%	4.65%
Real estate activities (L)	4.42%	4.46%	4.45%	4.38%	4.39%	4.08%	4.23%	4.25%	4.18%	4.17%	4.23%
Public administration and defence; compulsory social security (O)	10.17%	10.56%	10.86%	11.19%	11.56%	11.66%	10.81%	11.18%	12.41%	12.03%	11.72%
Education (P)	6.70%	6.75%	6.73%	6.66%	7.18%	7.43%	6.62%	6.63%	7.22%	6.96%	6.71%
Human health and social work activities (Q)	0.22%	0.19%	0.19%	0.22%	0.23%	0.23%	0.22%	0.22%	0.22%	0.22%	0.22%
Arts, entertainment and recreation (R); Other service activities (S); Activities of households as employers (T)	0.75%	0.72%	0.72%	0.75%	0.75%	0.75%	0.74%	0.74%	0.72%	0.72%	0.73%
<b>Total Services</b>	<b>58.30%</b>	<b>58.85%</b>	<b>58.94%</b>	<b>59.29%</b>	<b>60.43%</b>	<b>60.63%</b>	<b>60.07%</b>	<b>60.58%</b>	<b>61.55%</b>	<b>60.97%</b>	<b>60.95%</b>

 Source: Author's calculations from OECD (2025), "Trade in Value Added (TIVA)", <https://stats.oecd.org> (accessed April 12, 2026).

**Table 2** Tunisia: Employment by Broad Sectors, 2012-2022

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>In thousands</b>											
Total - all activities	3358.5	3433.7	3518.7	3496.5	3514.9	3538	3554.8	3513.4	3326.4	3370.1	3578.9
Agriculture, forestry and fishing	552.9	507	503.1	494.6	498.3	504.6	498.5	483.8	466.2	468.3	482.9
Mining and quarrying	18.3	22	20.8	17.7	16.3	16.5	16.6	16.7	16.9	17.1	18.9
Manufacturing	601.1	622	642.5	623	625.7	626.2	629.7	618.5	588.8	591.9	624.3
Utilities and other activities	19.1	20.4	20.4	18.4	20.1	20.7	20.7	20.7	19.8	20.3	21.1
Construction	434.7	437.2	451.6	450.8	463.4	470.6	478.4	472.9	442.8	458.5	486.1
Services of the business economy - sections G to N	987.8	1041.8	1080.1	1110.7	1097.6	1102.8	1109.6	1107.7	1030.7	1045	1119.7
Public admin, educ. & health; soc. & pers. serv.	744.6	783.4	800.4	781.3	793.4	796.6	801.4	793.1	761.1	769	825.9
<b>% of total</b>											
Total - all activities	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Agriculture, forestry and fishing	16.5%	14.8%	14.3%	14.1%	14.2%	14.3%	14.0%	13.8%	14.0%	13.9%	13.5%
Mining and quarrying	0.5%	0.6%	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Manufacturing	17.9%	18.1%	18.3%	17.8%	17.8%	17.7%	17.7%	17.6%	17.7%	17.6%	17.4%
Utilities and other activities	0.6%	0.6%	0.6%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
Construction	12.9%	12.7%	12.8%	12.9%	13.2%	13.3%	13.5%	13.5%	13.3%	13.6%	13.6%
Services of the business economy - sections G to N	29.4%	30.3%	30.7%	31.8%	31.2%	31.2%	31.2%	31.5%	31.0%	31.0%	31.3%
Public admin, educ. & health; soc. & pers. serv.	22.2%	22.8%	22.7%	22.3%	22.6%	22.5%	22.5%	22.6%	22.9%	22.8%	23.1%
Total services	51.6%	53.2%	53.4%	54.1%	53.8%	53.7%	53.8%	54.1%	53.9%	53.8%	54.4%

 Source: Author's calculations from OECD (2025), "Trade in Value Added (TIVA)", <https://stats.oecd.org> (accessed April 12, 2026).

Table 3

Tunisia: Employment Shares (% of Total Employment) by Services Sector, 2012-2022

ANALYSIS BY GROUPS	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Knowledge Services</b>	<b>6.04%</b>	<b>6.47%</b>	<b>6.38%</b>	<b>6.72%</b>	<b>6.68%</b>	<b>6.44%</b>	<b>6.31%</b>	<b>6.40%</b>	<b>6.27%</b>	<b>6.22%</b>	<b>6.45%</b>
Information and communication (J)	3.57%	3.91%	3.83%	4.11%	3.99%	3.72%	3.49%	3.51%	3.45%	3.43%	3.52%
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	0.39%	0.41%	0.40%	0.41%	0.41%	0.40%	0.38%	0.38%	0.38%	0.37%	0.38%
Telecommunications (J61)	1.81%	1.96%	1.94%	2.08%	2.02%	1.89%	1.70%	1.71%	1.69%	1.67%	1.72%
Computer programming, consultancy, and information service activities (J62-63)	1.38%	1.53%	1.50%	1.61%	1.56%	1.43%	1.41%	1.42%	1.39%	1.38%	1.42%
Professional, scientific and technical activities (M)	1.35%	1.39%	1.37%	1.40%	1.45%	1.47%	1.54%	1.58%	1.54%	1.53%	1.60%
Administrative and support service activities (N)	1.11%	1.17%	1.17%	1.21%	1.24%	1.25%	1.28%	1.31%	1.27%	1.26%	1.33%
<b>Enabling Services</b>	<b>8.33%</b>	<b>8.32%</b>	<b>8.04%</b>	<b>8.11%</b>	<b>8.17%</b>	<b>8.23%</b>	<b>8.30%</b>	<b>8.36%</b>	<b>8.27%</b>	<b>8.22%</b>	<b>8.42%</b>
Transportation and storage (H)	7.40%	7.46%	7.25%	7.27%	7.34%	7.26%	7.34%	7.39%	7.25%	7.20%	7.38%
Land transport and transport via pipelines (H49)	3.70%	3.64%	3.50%	3.53%	3.58%	3.62%	3.73%	3.75%	3.68%	3.66%	3.75%
Water transport (H50)	0.28%	0.29%	0.26%	0.26%	0.26%	0.26%	0.27%	0.27%	0.26%	0.26%	0.27%
Air transport (H51)	0.51%	0.48%	0.47%	0.43%	0.42%	0.41%	0.42%	0.42%	0.41%	0.41%	0.42%
Warehousing and support activities for transportation (H52)	1.80%	1.90%	1.89%	1.83%	1.89%	1.85%	1.85%	1.86%	1.83%	1.82%	1.86%
Postal and courier activities (H53)	1.10%	1.17%	1.13%	1.22%	1.18%	1.12%	1.07%	1.08%	1.06%	1.05%	1.08%
Financial and insurance activities (K)	0.93%	0.85%	0.80%	0.84%	0.83%	0.98%	0.96%	0.97%	1.02%	1.02%	1.04%
<b>Local Services</b>	<b>37.21%</b>	<b>38.37%</b>	<b>39.02%</b>	<b>39.28%</b>	<b>38.95%</b>	<b>39.02%</b>	<b>39.15%</b>	<b>39.34%</b>	<b>39.33%</b>	<b>39.39%</b>	<b>39.49%</b>
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	11.53%	11.89%	12.57%	13.40%	12.83%	12.74%	12.83%	12.96%	12.82%	12.91%	12.71%
Accommodation and food service activities (I)	3.33%	3.47%	3.52%	3.34%	3.34%	3.56%	3.57%	3.59%	3.42%	3.45%	3.48%
Real estate activities (L)	0.19%	0.19%	0.19%	0.19%	0.20%	0.20%	0.21%	0.22%	0.21%	0.21%	0.22%
Public administration and defence; compulsory social security (O)	8.69%	8.90%	8.92%	8.82%	8.89%	8.81%	8.82%	8.82%	9.02%	8.90%	8.99%
Education (P)	6.76%	6.91%	6.90%	6.79%	6.80%	6.72%	6.70%	6.67%	6.74%	6.74%	6.71%
Human health and social work activities (Q)	3.86%	4.07%	3.97%	3.81%	3.93%	4.04%	4.07%	4.12%	4.24%	4.25%	4.33%
Arts, entertainment and recreation (R)	0.40%	0.37%	0.38%	0.41%	0.46%	0.47%	0.49%	0.49%	0.44%	0.45%	0.46%
Other service activities (S)	0.75%	0.74%	0.73%	0.74%	0.70%	0.66%	0.63%	0.63%	0.63%	0.64%	0.66%
Activities of households as employers; undiff. goods- and services- (T)	1.72%	1.83%	1.85%	1.78%	1.80%	1.81%	1.83%	1.84%	1.82%	1.85%	1.93%
<b>Total Services</b>	<b>51.59%</b>	<b>53.16%</b>	<b>53.44%</b>	<b>54.11%</b>	<b>53.80%</b>	<b>53.69%</b>	<b>53.76%</b>	<b>54.10%</b>	<b>53.86%</b>	<b>53.82%</b>	<b>54.36%</b>

Source: Author's calculations from OECD (2025), "Trade in Value Added (TVA)", <https://stats.oecd.org> (accessed April 12, 2026).

Table 4

Tunisia: Value Added per Worker (\$000), 2012-2022

ANALYSIS BY GROUPS	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Knowledge Services</b>											
Information and communication (J)	18.7	17.1	17.1	14.5	14.3	14.0	15.7	15.4	16.4	18.1	16.7
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	14.7	13.7	14.1	12.2	11.6	11.8	13.7	13.5	14.3	15.8	14.5
Telecommunications (J61)	24.2	22.1	22.1	18.7	18.3	17.7	20.0	19.6	20.8	23.0	21.2
Computer programming, consultancy, and information service activities (J62-63)	12.5	11.6	11.4	9.8	9.6	9.7	11.1	10.9	11.5	12.8	11.8
Professional, scientific and technical activities (M)	30.6	29.6	29.5	26.5	24.4	21.6	22.6	21.7	23.4	25.8	23.2
Administrative and support service activities (N)	27.2	26.1	25.0	22.8	21.0	18.6	20.2	19.5	20.9	23.1	20.7
<b>Enabling Services</b>											
Transportation and storage (H)	14.9	14.2	14.1	12.5	11.8	11.8	13.0	13.0	13.8	15.3	14.0
Land transport and transport via pipelines (H49)	15.2	14.7	14.7	13.2	12.4	12.0	13.3	13.4	14.3	15.8	14.5
Water transport (H50)	14.1	13.8	14.8	13.8	12.3	11.8	12.4	12.6	13.7	15.1	13.7
Air transport (H51)	12.5	12.5	12.3	11.5	10.6	10.9	11.5	11.6	12.5	13.8	12.6
Warehousing and support activities for transportation (H52)	17.0	15.6	15.3	13.3	12.7	13.3	14.6	14.4	15.2	16.9	15.5
Postal and courier activities (H53)	11.6	10.8	10.9	9.4	9.1	9.0	10.0	9.8	10.4	11.5	10.6
Financial and insurance activities (K)	51.9	59.2	63.6	55.7	55.9	47.3	52.5	51.3	50.9	56.3	51.9
<b>Local Services</b>											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	9.6	9.5	9.0	8.0	7.9	7.6	8.3	8.2	8.7	9.5	9.1
Accommodation and food service activities (I)	17.7	16.8	16.3	15.4	14.8	13.3	15.3	14.6	15.6	17.3	16.2
Real estate activities (L)	304.9	303.8	293.3	266.7	237.6	213.4	226.5	218.9	235.1	257.6	232.4
Public administration and defence; compulsory social security (O)	15.1	15.3	15.5	14.8	14.4	13.9	13.8	14.1	16.3	17.6	15.8
Education (P)	12.8	12.6	12.4	11.5	11.7	11.6	11.2	11.1	12.7	13.4	12.1
Human health and social work activities (Q)	0.7	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.6
Arts, entertainment and recreation (R)	4.2	4.1	3.9	4.0	3.7	3.5	3.6	3.6	4.1	4.6	4.1
Other service activities (S)	4.7	4.5	4.4	4.2	3.9	3.7	3.9	3.8	4.0	4.3	3.9
Activities of households as employers; undiff. goods- and services- (T)	2.6	2.4	2.4	2.3	2.2	2.1	2.2	2.2	2.3	2.5	2.3

Source: Author's calculations from OECD (2025), "Trade in Value Added (TVA)", <https://stats.oecd.org> (accessed April 12, 2026).

**Table 5** Tunisia: Domestic VA share in Gross Exports (EXGR\_DVA; % of gross exports), 2012-2022

ANALYSIS BY GROUPS	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Knowledge Services</b>											
Information and communication (J)	84.3	85.6	85.5	82.9	84.6	83.1	85.1	89.5	91.5	91.0	89.4
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	76.8	77.5	77.7	75.7	77.5	75.9	78.8	83.8	86.7	85.1	82.8
Telecommunications (J61)	84.3	86.1	85.9	82.7	84.4	82.9	84.0	89.2	91.4	90.8	89.4
Computer programming, consultancy, and information service activities (J62-63)	87.4	87.9	87.5	86.3	87.9	86.2	89.1	91.8	93.4	93.2	91.9
Professional, scientific and technical activities (M)	87.3	87.5	87.1	86.5	87.9	85.4	88.3	90.1	91.8	90.8	89.5
Administrative and support service activities (N)	86.1	86.7	86.0	85.9	87.0	85.2	87.0	88.9	90.9	89.8	87.2
<b>Enabling Services</b>											
Transportation and storage (H)	74.6	75.8	75.6	75.7	78.6	76.7	77.0	72.7	77.1	74.0	67.2
Land transport and transport via pipelines (H49)	77.9	78.5	78.5	79.0	81.8	80.0	79.5	75.0	79.2	76.4	69.1
Water transport (H50)	57.3	59.3	58.9	59.1	61.3	57.6	59.8	52.2	55.3	50.1	48.1
Air transport (H51)	71.4	74.1	73.8	73.2	78.1	75.9	75.9	69.7	77.1	74.0	62.2
Warehousing and support activities for transportation (H52)	79.1	79.6	79.6	80.0	81.4	80.2	81.0	79.3	81.4	78.4	74.2
Postal and courier activities (H53)	83.1	84.7	85.3	82.6	85.1	83.5	83.6	88.5	91.1	89.1	86.3
Financial and insurance activities (K)	87.4	87.3	86.7	87.6	89.4	88.4	88.5	91.9	93.6	93.1	91.4
<b>Local Services</b>											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	85.7	86.4	86.6	86.5	87.3	86.6	87.8	84.8	87.4	86.0	82.7
Accommodation and food service activities (I)	79.6	80.8	80.5	84.2	84.6	83.7	83.8	84.9	86.0	84.8	82.1
Real estate activities (L)	94.5	94.6	94.4	94.1	94.9	93.8	94.8	96.2	96.8	96.5	95.8
Public administration and defence; compulsory social security (O)	87.5	87.8	88.3	86.5	89.2	88.1	88.7	88.2	91.8	90.2	87.3
Education (P)	93.0	92.9	93.1	92.6	93.6	92.9	93.9	94.0	95.3	95.1	93.9
Human health and social work activities (Q)	87.9	88.6	89.0	87.9	89.0	87.9	89.8	88.2	89.6	89.2	88.0
Arts, entertainment and recreation (R)	86.3	86.9	87.5	86.2	87.9	86.7	89.6	87.0	90.0	89.2	85.9
Other service activities (S)	83.7	84.5	85.2	84.3	85.3	84.6	87.8	87.2	88.9	88.5	87.5
Activities of households as employers; undiff. goods- and services- (T)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

 Source: Author's calculations from OECD (2025), "Trade in Value Added (TVA)", <https://stats.oecd.org> (accessed April 12, 2026).

**Table 6** Tunisia: Domestic VA Share in Foreign Final Demand (FFD\_DVA; % of value added), 2012-2022

ANALYSIS BY GROUPS	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Knowledge Services</b>											
Information and communication (J)	33.3	31.7	30.8	23.9	28.5	28.8	26.4	26.1	19.4	22.2	25.3
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	23.9	23.2	21.6	16.8	20.0	21.0	20.3	19.8	14.9	17.2	22.0
Telecommunications (J61)	34.0	31.9	30.8	24.0	28.2	28.1	24.9	24.6	17.4	19.8	22.0
Computer programming, consultancy, and information service activities (J62-63)	34.7	34.1	33.8	26.0	32.0	33.4	31.5	31.2	25.3	29.0	33.5
Professional, scientific and technical activities (M)	38.3	39.1	38.9	33.6	38.5	38.8	37.7	39.3	29.6	34.0	38.9
Administrative and support service activities (N)	34.4	33.6	33.0	25.4	29.6	30.7	29.5	30.6	23.2	25.8	28.5
<b>Enabling Services</b>											
Transportation and storage (H)	49.0	47.5	45.1	39.1	41.7	43.1	43.5	43.7	35.0	38.4	42.7
Land transport and transport via pipelines (H49)	42.0	40.5	38.5	32.9	35.8	37.3	37.5	37.8	30.4	32.9	36.8
Water transport (H50)	69.7	68.3	63.1	59.2	60.6	61.9	64.5	66.1	47.1	54.5	64.8
Air transport (H51)	91.0	91.1	90.4	76.3	81.8	80.7	87.2	88.7	68.3	81.3	87.8
Warehousing and support activities for transportation (H52)	54.8	52.1	48.8	43.9	46.1	47.8	48.8	49.1	40.4	44.1	48.4
Postal and courier activities (H53)	38.6	39.9	37.2	31.9	34.3	34.4	31.8	29.3	23.7	25.4	28.1
Financial and insurance activities (K)	25.0	24.1	22.9	18.0	21.5	22.6	22.1	20.2	14.7	17.0	19.4
<b>Local Services</b>											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	35.4	35.6	34.5	34.5	33.8	35.5	35.9	35.7	33.6	34.7	39.1
Accommodation and food service activities (I)	24.1	24.0	25.3	16.7	17.5	19.0	22.6	26.3	12.2	13.0	15.1
Real estate activities (L)	7.7	7.7	8.1	5.3	5.9	6.7	7.2	8.3	4.4	4.7	5.3
Public administration and defence; compulsory social security (O)	1.4	1.2	1.3	0.6	0.7	0.8	0.7	1.2	0.6	0.8	0.7
Education (P)	2.3	2.3	2.3	1.4	1.7	1.8	1.9	1.7	0.7	0.8	0.9
Human health and social work activities (Q)	22.0	25.2	27.6	15.6	14.0	15.9	21.8	26.6	11.0	11.8	13.8
Arts, entertainment and recreation (R)	64.8	61.9	64.3	54.2	49.1	53.4	61.6	66.8	40.8	44.6	56.0
Other service activities (S)	23.8	23.8	25.9	16.4	16.7	19.7	29.1	34.3	14.5	15.9	18.9
Activities of households as employers; undiff. goods- and services- (T)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

 Source: Author's calculations from OECD (2025), "Trade in Value Added (TVA)", <https://stats.oecd.org> (accessed April 12, 2026).

**Table 7** Tunisia: Domestic Employment Embodied in Gross Exports (EXGR\_DEM; % of sector employment), 2012-2022

ANALYSIS BY GROUPS	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Knowledge Services</b>											
Information and communication (J)	23.6	20.5	20.3	17.7	19.2	19.9	18.8	21.3	13.6	17.3	20.7
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	22.7	22.0	20.2	17.5	18.3	18.9	18.3	20.9	14.8	17.7	23.5
Telecommunications (J61)	27.8	22.5	22.9	19.1	20.9	20.4	17.9	20.6	12.6	16.1	19.0
Computer programming, consultancy, and information service activities (J62-63)	18.4	17.5	17.0	15.9	17.3	19.6	20.0	22.2	14.4	18.7	22.1
Professional, scientific and technical activities (M)	30.6	33.4	32.1	30.7	33.5	33.4	30.9	33.7	21.6	27.8	32.4
Administrative and support service activities (N)	16.1	16.1	15.5	12.9	12.8	14.0	13.6	15.2	9.2	11.6	13.2
<b>Enabling Services</b>											
Transportation and storage (H)	39.5	37.5	34.6	27.8	30.8	31.7	32.6	32.3	23.4	27.2	29.6
Land transport and transport via pipelines (H49)	31.6	30.4	28.1	23.0	24.7	25.9	26.7	26.8	19.5	22.2	24.1
Water transport (H50)	85.8	85.8	81.0	69.5	76.8	75.6	76.4	72.1	48.4	54.4	62.8
Air transport (H51)	141.1	140.9	142.5	104.2	125.6	126.3	129.9	122.3	91.0	107.7	110.6
Warehousing and support activities for transportation (H52)	35.8	30.9	25.9	23.9	26.0	27.7	28.9	29.1	21.5	25.4	28.5
Postal and courier activities (H53)	14.1	16.3	14.2	12.1	12.9	12.2	9.8	11.6	7.4	9.4	11.0
Financial and insurance activities (K)	18.0	18.4	18.0	16.4	17.7	17.8	16.9	17.8	10.8	13.5	15.6
<b>Local Services</b>											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	29.5	29.6	28.4	26.8	27.7	28.8	30.0	27.9	26.8	27.5	30.5
Accommodation and food service activities (I)	35.7	33.3	34.7	26.2	23.6	25.4	30.3	38.9	16.4	17.5	19.7
Real estate activities (L)	14.5	15.3	15.6	10.3	9.6	11.6	11.9	15.3	7.2	7.7	8.6
Public administration and defence; compulsory social security (O)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Education (P)	1.3	1.3	1.5	1.0	0.8	0.9	1.3	1.6	0.6	0.7	0.8
Human health and social work activities (Q)	22.1	25.3	27.8	15.7	14.0	15.9	21.9	26.7	10.9	11.8	13.8
Arts, entertainment and recreation (R)	71.6	68.3	70.3	60.2	53.8	58.5	65.8	71.7	43.8	47.9	60.4
Other service activities (S)	23.9	24.1	26.3	16.9	16.6	19.8	29.8	35.4	14.6	16.0	19.1
Activities of households as employers; undiff. goods- and services- (T)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: Author's calculations from OECD (2025), "Trade in Value Added (TVA)", <https://stats.oecd.org> (accessed April 12, 2026).**Table 8** Tunisia: Domestic Employment Embodied in Foreign Final Demand (FFD\_DEM; % of sector employment), 2012-2022

ANALYSIS BY GROUPS	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Knowledge Services</b>											
Information and communication (J)	33.2	31.8	31.0	24.0	28.8	29.4	27.1	26.8	20.3	23.2	26.6
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	23.9	23.2	21.6	16.8	20.0	21.0	20.3	19.8	14.9	17.2	22.0
Telecommunications (J61)	34.0	31.9	30.8	24.0	28.2	28.1	24.9	24.6	17.4	19.8	22.0
Computer programming, consultancy, and information service activities (J62-63)	34.7	34.1	33.8	26.0	32.0	33.4	31.5	31.2	25.3	29.0	33.5
Professional, scientific and technical activities (M)	38.3	39.1	38.9	33.6	38.5	38.8	37.7	39.3	29.6	34.0	38.9
Administrative and support service activities (N)	34.4	33.6	33.0	25.4	29.6	30.7	29.5	30.6	23.2	25.8	28.5
<b>Enabling Services</b>											
Transportation and storage (H)	49.0	47.6	45.2	39.0	41.7	42.9	43.4	43.4	34.7	38.2	42.4
Land transport and transport via pipelines (H49)	42.0	40.5	38.5	32.9	35.8	37.3	37.5	37.8	30.4	32.9	36.8
Water transport (H50)	69.7	68.3	63.1	59.2	60.6	61.9	64.5	66.1	47.1	54.5	64.8
Air transport (H51)	91.0	91.1	90.4	76.3	81.8	80.7	87.2	88.7	68.3	81.3	87.8
Warehousing and support activities for transportation (H52)	54.8	52.1	48.8	43.9	46.1	47.8	48.8	49.1	40.4	44.1	48.4
Postal and courier activities (H53)	38.6	39.9	37.2	31.9	34.3	34.4	31.8	29.4	23.7	25.4	28.1
Financial and insurance activities (K)	25.0	24.1	22.9	18.0	21.5	22.6	22.1	20.2	14.7	17.0	19.4
<b>Local Services</b>											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	35.4	35.6	34.5	34.5	33.8	35.5	35.9	35.7	33.6	34.8	39.1
Accommodation and food service activities (I)	24.1	24.0	25.3	16.7	17.5	19.0	22.6	26.3	12.2	13.0	15.1
Real estate activities (L)	7.8	7.7	8.1	5.3	5.9	6.7	7.2	8.3	4.4	4.7	5.3
Public administration and defence; compulsory social security (O)	1.4	1.2	1.3	0.6	0.8	0.8	0.7	1.2	0.6	0.8	0.7
Education (P)	2.3	2.3	2.3	1.4	1.7	1.8	1.9	1.7	0.7	0.8	0.9
Human health and social work activities (Q)	22.0	25.2	27.6	15.7	14.0	15.9	21.8	26.6	11.0	11.8	13.8
Arts, entertainment and recreation (R)	64.8	61.9	64.3	54.2	49.1	53.4	61.6	66.8	40.8	44.6	56.0
Other service activities (S)	23.8	23.8	25.9	16.4	16.7	19.7	29.2	34.3	14.5	15.9	18.9
Activities of households as employers; undiff. goods- and services- (T)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: Author's calculations from OECD (2025), "Trade in Value Added (TVA)", <https://stats.oecd.org> (accessed April 12, 2026).

**Table 9** Tunisia: HR Backward Linkage Index (normalized), 2012-2022

Service classification	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Knowledge Services</b>											
Information and communication (J)											
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	1.0765	1.0751	1.0635	1.0525	1.0564	1.0501	1.0264	1.0824	1.0758	1.0931	1.0924
Telecommunications (J61)	1.0498	1.0598	1.0679	1.0271	1.0424	1.0492	1.0454	1.132	1.0924	1.1245	1.1548
Computer programming, consultancy, and information service activities (J62-63)	0.9343	0.9516	0.9386	0.9303	0.9274	0.9483	0.9321	0.9443	0.9194	0.945	0.9773
Professional, scientific and technical activities (M)	0.929	0.943	0.931	0.9239	0.9191	0.9411	0.9245	0.9364	0.9215	0.9472	0.9618
Administrative and support service activities (N)	0.9301	0.9365	0.9286	0.9185	0.918	0.9392	0.9389	0.9522	0.9291	0.9523	0.9677
<b>Enabling Services</b>											
Transportation and storage (H)											
Land transport and transport via pipelines (H49)	1.0574	1.0568	1.0468	1.0122	1.0466	1.0609	1.0854	1.011	1.0323	1.0478	1.003
Water transport (H50)	0.9831	0.994	1.0003	0.9996	1.0051	0.9976	1.0276	0.9204	0.9264	0.8964	0.8828
Air transport (H51)	1.1387	1.1364	1.1487	1.1241	1.1663	1.1757	1.1837	1.0831	1.09	1.0874	1.0381
Warehousing and support activities for transportation (H52)	1.038	1.0452	1.0468	1.0389	1.0512	1.0584	1.0801	1.0454	1.06	1.0667	1.0553
Postal and courier activities (H53)	0.9885	1.0016	0.9956	0.9733	0.9847	1.003	1.0177	1.0895	1.0655	1.1812	1.1925
Financial and insurance activities (K)	1.0104	1.0043	0.9889	1.0127	1.0179	1.0273	1.0252	1.0654	1.0212	1.0458	1.0661
<b>Local Services</b>											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	1.0355	1.0237	1.0232	1.0267	1.0237	1.0333	1.0556	0.9964	0.9813	0.9944	1.0052
Accommodation and food service activities (I)	1.0585	1.0475	1.0402	1.1297	1.0926	1.0988	1.0933	1.1329	1.1281	1.1562	1.1466
Real estate activities (L)	0.8151	0.8199	0.8128	0.8167	0.8105	0.8317	0.8399	0.8526	0.8264	0.8496	0.8777
Public administration and defence; compulsory social security (O)	1.019	1.0111	1.0082	0.9961	0.9787	0.983	1.0069	0.9963	0.9292	0.9621	0.981
Education (P)	0.8481	0.842	0.84	0.8466	0.8305	0.838	0.859	0.8635	0.8314	0.8502	0.8826
Human health and social work activities (Q)	0.914	0.8959	0.8906	0.8962	0.8887	0.8871	0.898	0.8686	0.8573	0.8742	0.9052
Arts, entertainment and recreation (R)	1.0248	1.0224	1.0155	1.0123	1.0008	1.0093	0.9947	1.0009	0.9693	0.9936	1.0386
Other service activities (S)	0.9503	0.9312	0.9282	0.9407	0.9215	0.9229	0.9186	0.9189	0.9079	0.9231	0.936
Activities of households as employers; undiff. goods- and services- (T)	0.7058	0.6991	0.7011	0.7146	0.6986	0.7112	0.7477	0.7454	0.7154	0.7382	0.7707

Source: Author's calculations from OECD (2025), "Trade in Value Added (TIVA)", <https://stats.oecd.org> (accessed April 12, 2026).**Table 10** Tunisia: HR Forward Linkage Index (normalized), 2012-2022

Service classification	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Knowledge Services</b>											
Information and communication (J)											
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	0.9699	0.9613	0.9505	0.8555	0.9354	0.9527	0.9414	0.9282	0.9183	0.9303	0.936
Telecommunications (J61)	1.185	1.212	1.1999	1.0818	1.1754	1.1864	1.167	1.2369	1.2104	1.2069	1.2011
Computer programming, consultancy, and information service activities (J62-63)	1.2361	1.2638	1.277	1.1297	1.2515	1.2499	1.2119	1.2007	1.2998	1.2811	1.3139
Professional, scientific and technical activities (M)	1.1641	1.1581	1.1666	1.096	1.1512	1.1735	1.1665	1.1357	1.1698	1.1637	1.1682
Administrative and support service activities (N)	1.3403	1.3398	1.3288	1.2423	1.3335	1.3476	1.3545	1.3099	1.2844	1.3013	1.3121
<b>Enabling Services</b>											
Transportation and storage (H)											
Land transport and transport via pipelines (H49)	1.1871	1.1785	1.1729	1.1171	1.1664	1.1884	1.1988	1.188	1.1831	1.2047	1.1985
Water transport (H50)	0.8885	0.8812	0.884	0.9571	0.8877	0.9014	0.919	0.8832	0.896	0.9048	0.92
Air transport (H51)	0.7725	0.772	0.7727	0.8773	0.8128	0.8278	0.8382	0.8228	0.8538	0.8394	0.8684
Warehousing and support activities for transportation (H52)	1.3563	1.3918	1.4226	1.4081	1.4036	1.4254	1.4413	1.4113	1.4381	1.4461	1.4303
Postal and courier activities (H53)	1.4931	1.4782	1.4759	1.445	1.4716	1.5016	1.5415	1.6276	1.6007	1.6899	1.7113
Financial and insurance activities (K)	1.1942	1.182	1.1714	1.0495	1.1534	1.1794	1.1761	1.1529	1.0979	1.1192	1.1324
<b>Local Services</b>											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	0.9567	0.9477	0.9389	0.9871	0.9432	0.9526	0.9585	0.9587	0.9297	0.9545	0.9773
Accommodation and food service activities (I)	0.818	0.8061	0.7871	0.7541	0.8043	0.8185	0.831	0.8122	0.7979	0.8274	0.8468
Real estate activities (L)	0.7327	0.7368	0.734	0.7137	0.737	0.7536	0.7678	0.7584	0.7354	0.759	0.7875
Public administration and defence; compulsory social security (O)	0.7509	0.7457	0.7478	0.7154	0.7196	0.7319	0.762	0.76	0.7033	0.7314	0.7564
Education (P)	0.6949	0.6911	0.6905	0.6807	0.6839	0.697	0.727	0.7164	0.6819	0.705	0.7357
Human health and social work activities (Q)	0.6637	0.6609	0.6611	0.6646	0.6588	0.6717	0.7075	0.7032	0.6743	0.6962	0.7287
Arts, entertainment and recreation (R)	0.6696	0.667	0.6672	0.6696	0.6664	0.6795	0.7131	0.7071	0.6799	0.7016	0.7331
Other service activities (S)	0.7069	0.7008	0.7002	0.6891	0.6922	0.7022	0.7302	0.7204	0.695	0.7168	0.7443
Activities of households as employers; undiff. goods- and services- (T)	0.6599	0.6563	0.6572	0.6613	0.6548	0.6678	0.7045	0.7004	0.6709	0.693	0.7259

Source: Author's calculations from OECD (2025), "Trade in Value Added (TIVA)", <https://stats.oecd.org> (accessed April 12, 2026).

Table 11

Tunisia: Employment Multipliers, 2012-2022

Service classification	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Knowledge Services</b>											
Information and communication (J)											
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	0.0518	0.0546	0.0539	0.0608	0.0641	0.0632	0.0574	0.0621	0.0604	0.0535	0.0564
Telecommunications (J61)	0.0377	0.0414	0.0414	0.0469	0.0487	0.0499	0.045	0.0483	0.0467	0.042	0.0449
Computer programming, consultancy, and information service activities (J62-63)	0.0657	0.0699	0.0711	0.0827	0.0848	0.0838	0.0766	0.0807	0.0778	0.0698	0.075
Professional, scientific and technical activities (M)	0.0327	0.034	0.0338	0.0375	0.0407	0.0443	0.0421	0.0443	0.0423	0.038	0.0411
Administrative and support service activities (N)	0.0352	0.0367	0.0376	0.0417	0.0451	0.0492	0.0454	0.048	0.0459	0.0411	0.044
<b>Enabling Services</b>											
Transportation and storage (H)											
Land transport and transport via pipelines (H49)	0.0498	0.0518	0.0519	0.0581	0.0631	0.0642	0.0576	0.055	0.0539	0.0474	0.0473
Water transport (H50)	0.0377	0.0404	0.0384	0.0419	0.0473	0.0463	0.045	0.0397	0.0387	0.0321	0.0344
Air transport (H51)	0.0496	0.0529	0.0532	0.0578	0.0651	0.0634	0.0591	0.0555	0.057	0.05	0.0468
Warehousing and support activities for transportation (H52)	0.0479	0.0521	0.0531	0.0601	0.0641	0.0619	0.0566	0.055	0.0531	0.0464	0.0479
Postal and courier activities (H53)	0.0656	0.0709	0.0711	0.0811	0.0845	0.0845	0.0768	0.0853	0.0824	0.0726	0.0771
Financial and insurance activities (K)	0.0249	0.0236	0.0219	0.0254	0.0275	0.0302	0.0256	0.0257	0.0258	0.0232	0.0244
<b>Local Services</b>											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	0.0816	0.0835	0.0866	0.0973	0.0983	0.1021	0.0956	0.0922	0.0893	0.0812	0.0829
Accommodation and food service activities (I)	0.052	0.053	0.0529	0.0633	0.0651	0.0703	0.0597	0.0649	0.0611	0.055	0.0561
Real estate activities (L)	0.0073	0.0079	0.0077	0.0082	0.0093	0.0105	0.0083	0.0094	0.0097	0.0087	0.0092
Public administration and defence; compulsory social security (O)	0.0568	0.0566	0.0562	0.0602	0.0625	0.0647	0.0636	0.0624	0.0572	0.052	0.056
Education (P)	0.0708	0.0718	0.0729	0.08	0.0787	0.0795	0.0824	0.083	0.0737	0.0695	0.076
Human health and social work activities (Q)	0.993	1.2066	1.217	1.0922	1.1478	1.2658	1.261	1.3017	1.2748	1.1701	1.2509
Arts, entertainment and recreation (R)	0.1589	0.1638	0.172	0.1744	0.1858	0.1997	0.2038	0.1982	0.1821	0.1621	0.1699
Other service activities (S)	0.1501	0.1595	0.163	0.1753	0.1859	0.1978	0.2022	0.2012	0.1917	0.1787	0.1986
Activities of households as employers; undiff. goods- and services- (T)	0.3849	0.4129	0.4184	0.4403	0.4603	0.484	0.4484	0.456	0.4324	0.3999	0.4407

Source: Author's calculations from OECD (2025), "Trade in Value Added (TIVA)", <https://stats.oecd.org> (accessed April 12, 2026).

Table 12

Tunisia: Foreign value added in gross exports (EXGR\_FVA; % of gross exports), 2012-2022

Service classification	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Knowledge Services</b>											
Information and communication (J)	15.7	14.4	14.5	17.1	15.4	16.9	14.9	10.5	8.5	9.0	10.6
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	23.2	22.5	22.3	24.3	22.5	24.1	21.2	16.2	13.3	14.9	17.2
Telecommunications (J61)	15.7	14.0	14.1	17.3	15.6	17.1	16.0	10.8	8.6	9.2	10.6
Computer programming, consultancy, and information service activities (J62-63)	12.6	12.1	12.5	13.7	12.1	13.8	10.9	8.2	6.6	6.8	8.1
Professional, scientific and technical activities (M)	12.7	12.5	12.9	13.5	12.1	14.6	11.7	9.9	8.2	9.2	10.5
Administrative and support service activities (N)	13.9	13.3	14.0	14.1	13.0	14.8	13.0	11.1	9.1	10.2	12.8
<b>Enabling Services</b>											
Transportation and storage (H)	25.4	24.2	24.4	24.3	21.4	23.3	23.0	27.3	22.9	26.0	32.8
Land transport and transport via pipelines (H49)	22.1	21.5	21.5	21.0	18.2	20.0	20.5	25.0	20.8	23.6	30.9
Water transport (H50)	42.7	40.7	41.1	40.9	38.7	42.4	40.2	47.8	44.7	49.9	51.9
Air transport (H51)	28.6	25.9	26.2	26.8	21.9	24.1	24.1	30.3	22.9	26.0	37.8
Warehousing and support activities for transportation (H52)	20.9	20.4	20.4	20.0	18.6	19.8	19.0	20.7	18.6	21.6	25.8
Postal and courier activities (H53)	16.9	15.3	14.7	17.4	14.9	16.5	16.4	11.5	8.9	10.9	13.7
Financial and insurance activities (K)	12.6	12.7	13.3	12.4	10.6	11.6	11.5	8.1	6.4	6.9	8.6
<b>Local Services</b>											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	14.3	13.6	13.4	13.5	12.7	13.4	12.2	15.2	12.6	14.0	17.3
Accommodation and food service activities (I)	20.4	19.2	19.5	15.8	15.4	16.3	16.2	15.1	14.0	15.2	17.9
Real estate activities (L)	5.5	5.4	5.6	5.9	5.1	6.2	5.2	3.8	3.2	3.5	4.2
Public administration and defence; compulsory social security (O)	12.5	12.2	11.7	13.5	10.8	11.9	11.3	11.8	8.2	9.8	12.7
Education (P)	7.0	7.1	6.9	7.4	6.4	7.1	6.1	6.0	4.7	4.9	6.1
Human health and social work activities (Q)	12.1	11.4	11.0	12.1	11.0	12.1	10.2	11.8	10.4	10.8	12.0
Arts, entertainment and recreation (R)	13.7	13.1	12.5	13.8	12.1	13.3	10.4	13.0	10.0	10.8	14.1
Other service activities (S)	16.3	15.5	14.8	15.7	14.7	15.4	12.2	12.8	11.1	11.5	12.5
Activities of households as employers; undiff. goods- and services- (T)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: Author's calculations from OECD (2025), "Trade in Value Added (TIVA)", <https://stats.oecd.org> (accessed April 12, 2026).

**Table 13**

Tunisia: Domestic value added in foreign gross exports (FEXGR\_DVA; % of value-added), 2012-2022

Service classification	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Knowledge Services</b>											
Information and communication (J)	0.282	0.271	0.283	0.298	0.329	0.319	0.33	0.353	0.346	0.385	0.415
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	0.076	0.072	0.075	0.075	0.084	0.082	0.082	0.09	0.09	0.093	0.101
Telecommunications (J61)	0.108	0.1	0.099	0.099	0.103	0.094	0.084	0.085	0.062	0.073	0.077
Computer programming, consultancy, and information service activities (J62-63)	0.098	0.099	0.109	0.124	0.143	0.144	0.164	0.178	0.194	0.219	0.236
Professional, scientific and technical activities (M)	0.239	0.24	0.255	0.26	0.286	0.27	0.287	0.317	0.298	0.321	0.363
Administrative and support service activities (N)	0.204	0.199	0.21	0.201	0.217	0.205	0.213	0.227	0.191	0.204	0.237
<b>Enabling Services</b>											
Transportation and storage (H)	1.65	1.335	1.435	1.154	1.338	1.287	1.36	1.392	0.993	1.32	1.193
Land transport and transport via pipelines (H49)	0.365	0.318	0.336	0.303	0.324	0.312	0.314	0.343	0.25	0.419	0.383
Water transport (H50)	0.5	0.401	0.4	0.334	0.375	0.375	0.453	0.436	0.347	0.418	0.332
Air transport (H51)	0.57	0.427	0.511	0.332	0.437	0.407	0.388	0.4	0.212	0.275	0.277
Warehousing and support activities for transportation (H52)	0.189	0.164	0.163	0.164	0.178	0.167	0.169	0.179	0.151	0.175	0.17
Postal and courier activities (H53)	0.025	0.024	0.025	0.021	0.024	0.026	0.036	0.034	0.033	0.034	0.03
Financial and insurance activities (K)	0.281	0.287	0.284	0.301	0.323	0.321	0.314	0.359	0.306	0.316	0.332
<b>Local Services</b>											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	1.01	0.942	0.924	0.876	0.931	0.913	0.929	0.937	0.896	0.986	0.972
Accommodation and food service activities (I)	0.241	0.234	0.216	0.279	0.258	0.289	0.341	0.338	0.155	0.178	0.319
Real estate activities (L)	0.015	0.013	0.013	0.015	0.014	0.015	0.015	0.017	0.01	0.012	0.015
Public administration and defence; compulsory social security (O)	0.007	0.008	0.007	0.008	0.009	0.009	0.009	0.009	0.008	0.008	0.008
Education (P)	0.016	0.016	0.014	0.014	0.013	0.014	0.014	0.014	0.01	0.01	0.013
Human health and social work activities (Q)	0.01	0.009	0.01	0.011	0.011	0.011	0.011	0.012	0.008	0.007	0.009
Arts, entertainment and recreation (R)	0.039	0.04	0.041	0.049	0.054	0.051	0.057	0.07	0.065	0.064	0.081
Other service activities (S)	0.012	0.012	0.012	0.012	0.013	0.013	0.013	0.013	0.007	0.008	0.011
Activities of households as employers; undiff. goods- and services- (T)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

 Source: Author's calculations from OECD (2025), "Trade in Value Added (TIVA)", <https://stats.oecd.org> (accessed April 12, 2026).

**Table 14**

Tunisia: Value-Added Multipliers, 2012-2022

Service classification	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Knowledge Services</b>											
Information and communication (J)											
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	0.7605	0.7651	0.7622	0.7389	0.7587	0.7442	0.7767	0.8284	0.8545	0.8419	0.8211
Telecommunications (J61)	0.8398	0.8584	0.8502	0.8109	0.8301	0.8224	0.8315	0.8858	0.9074	0.9032	0.8896
Computer programming, consultancy, and information service activities (J62-63)	0.8688	0.8724	0.8641	0.8511	0.8669	0.8523	0.8842	0.9126	0.9281	0.9274	0.9154
Professional, scientific and technical activities (M)	0.8682	0.8699	0.8615	0.8541	0.8683	0.8457	0.8768	0.8948	0.9111	0.9022	0.8899
Administrative and support service activities (N)	0.8542	0.8619	0.8503	0.8463	0.8585	0.8432	0.8628	0.8823	0.9019	0.8916	0.8671
<b>Enabling Services</b>											
Transportation and storage (H)											
Land transport and transport via pipelines (H49)	0.7812	0.7908	0.7937	0.766	0.8177	0.8069	0.8086	0.7491	0.7897	0.7623	0.6939
Water transport (H50)	0.5804	0.6003	0.6005	0.5837	0.6232	0.589	0.6194	0.5273	0.5545	0.5031	0.4898
Air transport (H51)	0.7228	0.7507	0.7531	0.7211	0.7875	0.7665	0.7774	0.7031	0.7734	0.7429	0.63
Warehousing and support activities for transportation (H52)	0.7879	0.7934	0.7904	0.7879	0.8054	0.7973	0.8085	0.7891	0.8086	0.7806	0.7409
Postal and courier activities (H53)	0.826	0.8475	0.8527	0.8062	0.8398	0.8287	0.8293	0.8823	0.9071	0.8881	0.8617
Financial and insurance activities (K)	0.8704	0.8665	0.8571	0.8643	0.8818	0.8737	0.8772	0.9134	0.9288	0.9264	0.9106
<b>Local Services</b>											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	0.8572	0.8638	0.8612	0.8545	0.867	0.8638	0.8774	0.8406	0.866	0.8532	0.8218
Accommodation and food service activities (I)	0.7884	0.7978	0.786	0.8201	0.8253	0.8145	0.8218	0.8505	0.8615	0.852	0.8262
Real estate activities (L)	0.9433	0.944	0.94	0.9364	0.9442	0.9347	0.9453	0.9571	0.9627	0.9602	0.9528
Public administration and defence; compulsory social security (O)	0.8699	0.8716	0.873	0.8493	0.8795	0.8715	0.8783	0.8747	0.9113	0.8968	0.8686
Education (P)	0.9268	0.9256	0.9256	0.9187	0.9298	0.9242	0.9345	0.9365	0.9502	0.9482	0.936
Human health and social work activities (Q)	0.8722	0.8799	0.881	0.8671	0.8783	0.8693	0.8906	0.8753	0.8891	0.8861	0.8751
Arts, entertainment and recreation (R)	0.8575	0.8622	0.8635	0.8473	0.865	0.8564	0.8872	0.8615	0.8916	0.8846	0.8523
Other service activities (S)	0.8274	0.8368	0.8399	0.828	0.8393	0.8331	0.869	0.8635	0.8795	0.8776	0.8695
Activities of households as employers; undiff. goods- and services- (T)	1	1	1	1	1	1	1	1	1	1	1

 Source: Author's calculations from OECD (2025), "Trade in Value Added (TIVA)", <https://stats.oecd.org> (accessed April 12, 2026).

Table 15

Tunisia: Labor Income Share (of value added), 2012-2022

Service classification	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Knowledge Services</b>											
Information and communication (J)											
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	0.513	0.5071	0.5128	0.522	0.4935	0.4908	0.5049	0.5178	0.5132	0.5009	0.5247
Telecommunications (J61)	0.2558	0.2662	0.2849	0.2931	0.2947	0.2859	0.2974	0.2929	0.2597	0.2853	0.2972
Computer programming, consultancy, and information service activities (J62-63)	0.5446	0.5597	0.5845	0.594	0.5912	0.5957	0.6007	0.604	0.5916	0.604	0.6344
Professional, scientific and technical activities (M)	0.4873	0.5065	0.5145	0.5253	0.5309	0.5209	0.5247	0.529	0.5224	0.505	0.5188
Administrative and support service activities (N)	0.531	0.5464	0.5515	0.5623	0.5681	0.5586	0.5681	0.5674	0.5849	0.5651	0.5674
<b>Enabling Services</b>											
Transportation and storage (H)											
Land transport and transport via pipelines (H49)	0.4845	0.4826	0.4929	0.5042	0.4984	0.5084	0.5267	0.5386	0.5243	0.5381	0.5352
Water transport (H50)	0.4467	0.3977	0.3937	0.3888	0.3707	0.4158	0.4863	0.4522	0.4053	0.4526	0.4101
Air transport (H51)	0.5844	0.5694	0.5909	0.5247	0.56	0.5463	0.561	0.5786	0.4504	0.5458	0.5637
Warehousing and support activities for transportation (H52)	0.4463	0.4308	0.4447	0.4408	0.4615	0.4443	0.4467	0.4612	0.4813	0.4702	0.4437
Postal and courier activities (H53)	0.7618	0.7686	0.7477	0.7503	0.7349	0.7507	0.7442	0.7625	0.7359	0.7268	0.739
Financial and insurance activities (K)	0.4667	0.4597	0.4775	0.492	0.4963	0.4895	0.4835	0.4668	0.4536	0.482	0.4782
<b>Local Services</b>											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	0.1591	0.1596	0.1682	0.1924	0.1819	0.1831	0.1888	0.1953	0.1911	0.1825	0.1869
Accommodation and food service activities (I)	0.3178	0.3262	0.3507	0.3381	0.3253	0.327	0.3356	0.3359	0.3427	0.3542	0.3377
Real estate activities (L)	0.0399	0.0411	0.0433	0.0424	0.0455	0.0471	0.0513	0.0513	0.0435	0.0427	0.0472
Public administration and defence; compulsory social security (O)	0.6364	0.6454	0.6521	0.6692	0.6815	0.6807	0.7031	0.7181	0.7085	0.7142	0.7034
Education (P)	0.9149	0.9152	0.9183	0.9422	0.9526	0.9347	0.9414	0.9026	0.9239	0.8869	0.9171
Human health and social work activities (Q)	0.6988	0.7087	0.7181	0.719	0.7062	0.7138	0.7055	0.687	0.7002	0.6621	0.6832
Arts, entertainment and recreation (R)	0.4455	0.4629	0.4686	0.4674	0.4722	0.4798	0.519	0.5093	0.5464	0.5385	0.5163
Other service activities (S)	0.5037	0.5121	0.4929	0.4925	0.4993	0.4994	0.5215	0.5065	0.5248	0.5032	0.5414
Activities of households as employers; undiff. goods- and services- (T)	0.9995	0.9995	0.9995	1	1	1	1	1	1	1	1

Source: Author's calculations from OECD (2025), "Trade in Value Added (TIVA)", <https://stats.oecd.org> (accessed April 12, 2026).

Table 16

Tunisia: Labor Income Multipliers, 2012-2022

Service classification	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Knowledge Services</b>											
Information and communication (J)											
Publishing, motion picture, video, television programme production; sound recording, programming and broadcasting activities (J58-60)	0.3707	0.37	0.3734	0.369	0.362	0.355	0.3816	0.4239	0.4294	0.4174	0.4247
Telecommunications (J61)	0.2725	0.2882	0.3002	0.2882	0.2956	0.2876	0.2969	0.2911	0.2702	0.2902	0.297
Computer programming, consultancy, and information service activities (J62-63)	0.4533	0.4639	0.4787	0.4823	0.4873	0.4818	0.5114	0.5349	0.5329	0.5427	0.5616
Professional, scientific and technical activities (M)	0.4157	0.4292	0.4318	0.4377	0.4482	0.4297	0.4525	0.4656	0.4664	0.449	0.4554
Administrative and support service activities (N)	0.435	0.449	0.4479	0.457	0.466	0.4511	0.4731	0.4832	0.5038	0.484	0.475
<b>Enabling Services</b>											
Transportation and storage (H)											
Land transport and transport via pipelines (H49)	0.3702	0.3728	0.3837	0.3771	0.3997	0.3994	0.4139	0.3896	0.3988	0.3932	0.357
Water transport (H50)	0.259	0.248	0.2495	0.2394	0.2535	0.2541	0.2962	0.2404	0.2359	0.2294	0.2039
Air transport (H51)	0.3742	0.3808	0.3939	0.3527	0.4001	0.3825	0.3998	0.3767	0.3542	0.3835	0.3311
Warehousing and support activities for transportation (H52)	0.3493	0.3415	0.3498	0.3493	0.3675	0.3551	0.3644	0.3675	0.3865	0.3669	0.3323
Postal and courier activities (H53)	0.5697	0.5873	0.5812	0.5595	0.5657	0.5684	0.5713	0.6311	0.6263	0.6032	0.5987
Financial and insurance activities (K)	0.3912	0.3845	0.3926	0.4086	0.4201	0.4134	0.4101	0.4315	0.4263	0.4476	0.4393
<b>Local Services</b>											
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	0.1923	0.1906	0.1999	0.2123	0.2159	0.2143	0.2145	0.2183	0.2225	0.2104	0.2015
Accommodation and food service activities (I)	0.2421	0.2503	0.2598	0.2604	0.2644	0.26	0.2621	0.28	0.2865	0.2875	0.2711
Real estate activities (L)	0.0712	0.0761	0.0755	0.0718	0.0778	0.0811	0.0783	0.0838	0.078	0.0773	0.0784
Public administration and defence; compulsory social security (O)	0.5047	0.5125	0.5208	0.5196	0.5498	0.546	0.5686	0.5795	0.6004	0.5944	0.5722
Education (P)	0.7892	0.7875	0.7926	0.8102	0.8285	0.8116	0.8329	0.804	0.8316	0.8015	0.8187
Human health and social work activities (Q)	0.5573	0.5725	0.5832	0.5772	0.5739	0.5766	0.5921	0.5725	0.5858	0.5569	0.5695
Arts, entertainment and recreation (R)	0.3761	0.3894	0.3964	0.3844	0.4012	0.4005	0.4461	0.4278	0.4637	0.4549	0.4246
Other service activities (S)	0.3963	0.4073	0.3985	0.3909	0.4047	0.4017	0.4394	0.4292	0.4469	0.4311	0.4575
Activities of households as employers; undiff. goods- and services- (T)	0.9995	0.9995	0.9995	1	1	1	1	1	1	1	1

Source: Author's calculations from OECD (2025), "Trade in Value Added (TIVA)", <https://stats.oecd.org> (accessed April 12, 2026).



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