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Uzavřené nebo otevřené fondy?

*Petr Musílek**

Abstrakt:

Příspěvek diskutuje vývoj postavení jednotlivých druhů investičních fondů. V úvodní části příspěvku jsou rozebrány podrobnější charakteristiky, výhody a rizika fondů kolektivního investování. Současně jsou diskutovány klíčové milníky ve vývoji institucionálního uspořádání kolektivního investování. Dále jsou analyzovány výhody a nevýhody uzavřených a otevřených fondů. V závěrečné části příspěvku je rozebrán důvod boomu otevřených fondů oproti fondům uzavřeného typu v posledních dekadách.

Klíčová slova: Kolektivní investování; Uzavřené fondy; Otevřené fondy; Čistá hodnota aktiv.

JEL klasifikace: G23.

1 Úvod

Problematika nebankovních finančních institucí nebývá příliš často zkoumána v oblasti finanční a investiční ekonomie. Institucionální uspořádání fondového investování může výrazně ovlivňovat postavení a životaschopnost investičních entit v investičním systému. V úvodní části diskusního příspěvku jsou uvedeny podstatné znaky kolektivního investování včetně rozboru nejdůležitějších milníků. V další části textu je pozornost věnována jak tradičním uzavřeným investičním fondům, tak zvláštním typům uzavřených fondů. V následující části je pozornost věnována otevřeným fondům. V závěrečné části příspěvku jsou diskutovány klíčové faktory, které stojí za prudkým růstem poptávky po otevřených fondech na rozvinutých investičních trzích.

2 Podstata kolektivního investování a klíčové milníky

Kolektivní investování je založeno na společném investičním zájmu většího počtu individuálních investorů co možná nejefektivněji zhodnotit své volné peněžní prostředky při současné snaze minimalizovat investiční rizika dostatečnou diverzifikací společného (vzájemného) portfolia. Zdá se, že první zárodky kolektivního investování vznikají již v druhé polovině 18. století v Holandsku. V roce 1774 holandský kupec a investiční zprostředkovatel Abraham van Ketwich vyzval drobné investory k úpisu 2 000 cenných papírů fondu, nesoucího název Svornost vytváří sílu (holandsky Eendragt Maakt Magt). Založením tohoto fondu se van Ketwich snažil vrátit důvěru drobným investorům po finanční krizi, která

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Článek je zpracován jako jeden z výstupů výzkumného projektu Fakulty financí a účetnictví VŠE v Praze, který je realizován v rámci institucionální podpory VŠE IP100040.

propukla v letech 1772–1773. Hlavní důvod finančních problémů zejména anglických bank spočíval v nadměrné expozici ve společnosti the British East India Company. Později se finanční krize rozšířila i do Amsterdamu, kde se také mnoho bankovních domů dostalo do značných problémů. Jednou z možností překonání krize důvěry bylo nabídnutí určité investiční inovace (novinky). Široká veřejnost získala možnost diverzifikace portfolia již při velmi nízké počáteční výši kapitálu (500 guldenů). Podle soudobé investiční terminologie fond Svornost vytváří sílu měl charakter uzavřeného fondu. Počáteční úspěch tohoto fondu inspiroval v Holandsku další kupce a obchodníky k zakládání obdobných forem investičního podnikání. V roce 1776 konsorcium bankéřů z Utrechtu založilo investiční fond Ziskový a obezřetný (holandsky Vordeelig en Voorsigtig), investující zejména do koloniálních půjček. Navíc v roce 1779 Abraham van Ketwich založil druhý fond s latinským názvem Concordia Res Parvae Crescunt (česky opět Svornost vytváří sílu), mající mnohem větší flexibilitu při koncipování a realizaci investiční politiky. Prospekt tohoto fondu pouze stanovil, že fond bude investovat nejen do kvalitních cenných papírů, ale také i do podhodnocených investičních aktiv.

Investiční výsledky prvních holandských fondů však nebyly příliš úspěšné. Jejich neúspěch zejména souvisel s výrazným poklesem hodnoty koloniálních půjček v 80. letech 18. století. V roce 1782 van Ketwich zastavil obchodování s cennými papíry fondu Svornost vytváří sílu a na několik let omezil výplatu dividend. Na přelomu 18. a 19. století cenné papíry fondů Eendragt Maakt Magt, Vordeelig en Voorsigtig a Concordia Res Parvae Crescunt dokonce mizí z kursovního listku Amsterdamské burzy a dále jsou pouze nepravidelně obchodovány na privátních aukcích, organizovaných investičními bankéři. V roce 1803 fondy Eendragt Maakt Magt a Concordia Res Parvae Crescunt byly převzaty firmou van Ketwich & Voomberg. V roce 1811 pak cenné papíry fondu Eendragt Maakt Magt klesly až na úroveň 25 % její nominální hodnoty, která činila 500 guldenů. V dalších letech došlo k určitému zotavení kursů cenných papírů tohoto fondu a v roce 1824 fond vyplatil zbývajícím podílníkům likvidační dividendu ve výši 561 guldenů a ukončil svoji činnost. Naopak vypořádání podílníků fondu Concordia Res Parvae Crescunt trvalo neuvěřitelných 114 let, přičemž likvidační dividendu činila 430,55 guldenů (tj. 87 % původní investice).

Ve 20. letech 19. století belgická Société de Belgique založila první fondy kolektivního investování, a to konkrétně v roce 1822. O 30 let později vznikl první investiční fond ve Francii, který se nazýval Crédit Mobiliér. V roce 1860 byla založena ve Skotsku Scottish-American Investment Company. V roce 1868 byl vytvořen v Londýně fond Foreign and Colonial Government Trust, investující zejména do zahraničních hypoték, železnic a jiných průmyslových společností. Tento fond fungoval velmi podobně jako první holandské fondy a po deseti letech jeho činnosti byl kótován na Londýnské burze. Podle jeho prospektu bylo základním cílem drobným investorům zajistit výhody institucionálních investorů diverzifikací

rizika, a to investováním do zahraničních a koloniálních cenných papírů. Dosažený výnos z portfolia fondu byl pouze částečně vyplácen ve formě dividend a nerozdělené výnosy byly akumulovány tak, aby bylo možné umořit cenné papíry fondu za 24 let. Foreign and Colonial Government Trust díky efektivní diverzifikaci portfolia bez problémů „přežil“ i Baring krizi v roce 1890. Tato banka měla extrémní expozici v Argentině. Při kolapsu argentinského finančního systému se podařilo britskou banku zachránit jen díky záchrannému programu Bank of England.

V 70. letech 19. století prudký rozvoj britského kolektivního investování ve formě uzavřených fondů pokračoval. Např. v roce 1875 vzniklo v Londýně 18 fondů investujících zejména do zahraničních cenných papírů, britských státních dluhopisů a britských akcií. V této době zakládá fond také skotský obchodník Robert Fleming s názvem First Scottish American Investment Trust, investující zejména do amerických železničních dluhopisů. Před první světovou válkou existovalo v Británii více než 100 investičních fondů. Otevřené fondy začaly v Británii vznikat až ve 30. letech minulého století. Angličtí investiční bankéři, inspirovaní návštěvou USA, založili experimentálně první otevřený fond First British Fixed Trust v dubnu roku 1931, investující do pevně stanovených cenných papírů na předem určenou dobu. Základním cílem bylo diverzifikovat riziko při dosažení vyššího výnosu než při investování do věčných rent (konzol). Experiment byl úspěšný a další otevřené fondy se začaly rychle zakládat. Navíc začaly nové fondy rychle používat flexibilnější investiční strategie. Clarke (1999, s. 52) uvádí, že koncem 30. let minulého století ve Velké Británii již fungovalo 30 otevřených fondů s investičním majetkem 80 mil. liber, spravovaných 15 správcovskými společnostmi.

Rozvoj kolektivní investování se v USA o několik desítek let opozdil ve srovnání s Evropou. Americká kolektivní forma investování se vyvinula z podniků holdingového typu. Např. The Boston Personal Property Trust zahájil sice činnost v roce 1893, ale teprve později se přeměnil na investiční společnost. Podobný vývoj zaznamenala The Railway and Light Securities Company, která byla založena v roce 1904. Teprve v roce 1921 byl od samého začátku založen jako uzavřený investiční fond The Securities of America. Do roku 1929 vzniklo v USA 420 uzavřených fondů, přičemž velká většina z nich se dostala do obrovských finančních problémů ve 30. letech minulého století, a to zejména z důvodu vysoké zadluženosti, nedostatečné diverzifikaci portfolia a rozsáhlých nepoctivých praktik jejich správců. Vůbec prvním americkým otevřeným fondem byl The Massachusetts Investors Trust, založený v roce 1924 v Bostnu. Tento fond neměl pevně stanovenou výši kapitálu, což umožnilo fondům velkou flexibilitu v počtu vydaných podílů a současně zajistit vysoký stupeň likvidity investorům. Právě z tohoto důvodu se otevřené fondy staly postupně značně populární a získaly mnohem větší význam než fondy uzavřeného typu. I když soudobé institucionální uspořádání kolektivního investování se značně modernizovalo, některé původní základní prvky

fondů z 18. a 19. století zůstávají v platnosti do dnešní doby (zejména shromažďování prostředků od široké veřejnosti, definování investiční strategie na základě prospektu, princip diverzifikace rizika a informační povinnost fondu).

V evropských státech pod německým vlivem (kromě Německa např. Dánsko nebo Rakousko) se první zárodky kolektivního investování objevují až po druhé světové válce. Např. v Německu byla první investiční společnost Allgemeine Deutsche Investmentgesellschaft založena až v roce 1949 skupinou německých bank (Bayerische Staatsbank, Bayerische Hypotheken- und Wechsel-bank, Württembergische Bank in Stuttgart a Bankhaus Seiler&Co.). Do roku 1956 vznikly pouze další čtyři investiční společnosti. Do konce 50. let investovaly německé fondy výlučně do akciových instrumentů. Teprve v 60. letech začaly německé fondy postupně investovat i do nemovitostí a dluhopisů. V polovině 70. let existovalo v Německu pouze několik desítek fondů. K velkému rozmachu německého kolektivního investování však dochází na přelomu tisíciletí, přičemž v současné době funguje v Německu více než 2 000 veřejných fondů.

Na asijském trhu došlo k rozvoji kolektivního investování až v 80. letech minulého století, a to zejména v Japonsku a Jižní Koreji. Naopak v Hongkongu nebo Singapuru spíše dominantní postavení zaujímá investování individuální.

Na nově vznikajících trzích ve střední a východní Evropě se kolektivní investování rozvinulo až v 90. letech minulého století, a to zejména jako integrální součást různých kuponových metod privatizace státního majetku. Celkově lze konstatovat, že kuponové privatizace měly na ekonomiku jak pozitivní dopady, tak i některé negativní vlivy. Mezi pozitivní dopady kuponových metod patřily především velmi důležité krátkodobé efekty: „bleskové“ odstátnění podnikové sféry, zabránění spontánní manažerské privatizaci, zabránění majetkovému ovládnutí ekonomiky netransparentním zahraničním (nejspíše východoevropským) kapitálem, nabídka tzv. lidových akcií široké investiční veřejnosti a rychlá renesance investování a investičního bankovníctví v nadměrně konzervativním finančním prostředí. Bohužel kuponové metody měly také některé dlouhodobé nezamýšlené dopady, a to zejména na postupně se formující burzovní trh, poněvadž tato privatizační metoda nepřinesla nejen nový finanční kapitál, ale ani potřebné know-how pro privatizované nevykonné podniky. Snad největším nepříznivým efektem bylo překvapivě rozsáhlé a masivní rozšíření nepoctivých praktik a investiční kriminality. Podlomení důvěry investorské veřejnosti zajisté pak přispělo k dlouhodobé stagnaci východoevropských kapitálových trhů včetně kolektivního investování.

Fondy kolektivního investování patří mezi významné institucionální investory na světových finančních trzích. Odhaduje se (např. Investment Company Fact Book, 2025, s. 20), že regulované fondy vlastní 27 % celosvětové tržní kapitalizace cenných papírů. Stále rostoucí popularita kolektivního investování (např. koncem

roku 2024 existovalo celosvětově více než 144 tis. regulovaných fondů s majetkem téměř 74 bil. USD) byla vyvolána větším počtem faktorů, které diskutujeme v následujícím textu. Instituce kolektivního investování zabezpečují profesionální správu úspor. Správa portfolií je svěřena odborníkům, kteří neustále sledují dění na investičních trzích a okamžitě reagují na neočekávané kursotvorné události. Při svém rozhodování správci vycházejí z podrobných investičních analýz a investiční portfolio spravují s využitím nejmodernějších poznatků. Profesionální správci aktiv rovněž využívají různé techniky řízení investičních rizik prostřednictvím finančních derivátů. Profesionální správa aktiv by pak měla přispět k vyšší výkonnosti společného (vzájemného) portfolia. Spojování individuálních portfolií do společného portfolia by mělo umožňovat efektivnější diverzifikaci rizika. Naopak individuální investoři mají omezené možnosti diverzifikace rizika v důsledku nedostatečné výše kapitálu. Instituce kolektivního investování dosahují při správě aktiv úspor z rozsahu a ze sortimentu, což pak umožňuje drobným investorům spravovat investiční majetek za nižších nákladů oproti individuálnímu přístupu. Kolektivní investování umožňuje drobným investorům také investovat do široké palety investičních instrumentů, které by jim jinak byly obtížně kapitálově a odborně dostupné. Typickým příkladem jsou instrumenty peněžního trhu, nemovitosti, finanční deriváty nebo zahraniční cenné papíry. Motivem kolektivního investování je často i sociální odpovědnost domácností, která spočívá ve vytváření úspor pro období penzijního věku, odkládání části disponibilního důchodu za účelem budoucího financování vzdělání svých dětí či financování neočekávaných zdravotních výdajů. Kolektivní investování je založeno na jednoduchosti a pohodlnosti, což výrazně ulehčuje správu úspor domácností. Instituce kolektivního investování nabízejí svým klientům také rozsáhlou paletu služeb. Mezi standardní nabízené služby patří automatické reinvestování, depot, právo směny, akumulační plán nebo výplatní plán. Instituce kolektivního investování obvykle vytvářejí rodiny fondů s různými charakteristikami, což umožňuje investorům přesouvat peněžní prostředky mezi jednotlivými fondy za minimálních transakčních nákladů, a to často kontinuálně internetovým způsobem.

Kolektivní investování je však spojeno nejen s výhodami, ale i s určitými riziky. Jsme toho názoru, že mezi klíčové definiční znaky kolektivního investování patří tržní způsob oceňování cenných papírů fondů kolektivního investování, kdy ztráty přirozeně plně dopadají na investora. Dále neexistence garančních systémů v případě úpadku fondu nebo jeho správce. Rovněž může vznikat potenciální konflikt zájmů mezi investory a správci portfolia. Nesmíme zapomínat i na nepoctivé praktiky ze strany správců svěřených prostředků. V některých případech se může vyskytnout i nesplnění odkupní povinnosti fondem či správcem fondu, pokud se fond dostane do likvidních problémů a zpětné odkupy jsou zastaveny či omezeny.

V posledních dekádách dochází k významné koncentraci správců aktiv fondů (otevřených fondů a ETF fondů), což dokumentuje níže uvedená tabulka.

Tab. 1 Podíl 10 největších správců fondů (USA, 2005–2024)

Rok	Podíl v %
2005	46
2020	64
2024	71

Zdroj: Investment Company Fact Book (2025, s. 24).

Výrazný vzestup koncentrace největších správců je především vyvolán boomem pasivně spravovaných fondů, zejména burzovně obchodovaných fondů (ETF). Podrobněji roli ETF fondů rozebírá Musílek (2023). Růst významu fondů kolektivního investování má podstatný vliv na formování mikrostruktury investičních trhů. Pro aktivity fondů kolektivního investování je mimořádně důležitá likvidita sekundárních trhů, efektivní ochrana práv vnějších investorů, adekvátní standardy zveřejňování informací, tržně orientované účetnictví, fungující legislativní prostředí a zdravý finanční systém. Fondy kolektivního investování na jedné straně požadují vysokou likviditu sekundárních investičních trhů, na druhé straně však svými aktivitami zpětně ovlivňují stupeň likvidity investičních trhů. Likvidní požadavky fondů podporují nejen konsolidaci roztržštěných národních burzovních trhů do nadnárodních burzovních elektronických obchodních systémů, ale také přispívají k vytváření specializovaných institucionálních trhů, které umožňují realizaci obchodů s velkým počtem cenných papírů určitého titulu (blokové obchody) nebo s velkým počtem rozdílných titulů v jednom časovém okamžiku (programové obchodování). Potřeby fondů kolektivního investování se rovněž odrážejí v postupném opouštění obchodních systémů založených na principu tvůrců trhu a jejich nahrazování systémy řízených příkazy, které umožňují výrazné snižování transakčních nákladů. Na druhé straně se zdá, že instituce kolektivního investování mohou zvyšovat volatilitu cen investičních instrumentů, což podrobněji rozebírá Musílek (2010).

3 Tradiční uzavřené fondy

Tradiční uzavřený fond (angl. closed-end fund) kolektivního investování se vyznačuje tím, že je přesně stanoven počet emitovaných cenných papírů. Počáteční nabídku cenných papírů zpravidla organizují ručitelským způsobem investiční prostředníci. Po umístění cenných papírů na primárním trhu existuje omezený počet investorů, kteří však nemají právo zpětného prodeje cenných papírů emitentům. S těmito cennými papíry se však obchoduje na sekundárních trzích, přičemž jejich tržní cena kolísá nejen s výší čisté hodnoty aktiv, ale i na základě dalších faktorů.

Cenné papíry historicky prvního uzavřeného fondu Svornost vytváří sílu byly emitovány v listinné podobě, kdy plášť měl v podstatě charakter prospektu o 17 člancích. První článek statutu stanovil jmenování dvou komisařů (Dirk Bas Backer a Frans Jakob Heshuysen), dozorující investiční politiku fondu.

Druhý článek prospektu detailně specifikoval deset investičních tříd, do kterých fond mohl investovat (cenné papíry z Rakousku, Dánska, Německa, Španělska, Švédska, Ruska a z vybraných oblastí, které spadaly do koloniálního vlastnictví).

Organizace trustu kladla velký důraz na svěrenskou (fiduciární) odpovědnost vůči investorské veřejnosti. Prospekt stanovil, že správce van Ketwich měl povinnost předkládat určeným komisařům každoročně účetnictví a na požádání kohokoliv prokázat, že vykonává správu kvalitně a řádně. Správce za své služby získal při úpisu cenných papírů provizi ve výši 0,5 % z hodnoty fondu a každý rok pak odměnu ve výši 100 guldenů za každou třídu cenných papírů. Rouwenhorst (2004) uvádí, že přepočtený roční obhospodařovatelský poplatek činil přibližně 0,2 % z hodnoty aktiv. Listinné cenné papíry, do kterých fond Svornost vytváří sílu investoval, byly uloženy v obchodní místnosti van Ketwiche, a to v ocelové truhle se třemi samostatně fungujícími zámky, jejichž klíče měli oba komisaři a pověřený veřejný notář. Jednalo se v podstatě o primitivní podobu soudobého depozitáře.

Prospekt fondu požadoval, aby byla neustále zajištěna dostatečná diverzifikace portfolia. 2 000 emitovaných cenných papírů fondu bylo dále rozděleno do dvaceti tříd a kapitál každé třídy byl investován do 50 cenných papírů. Každá třída musela obsahovat minimálně 20 různých cenných papírů a od jednoho titulu mohly být maximálně tři cenné papíry. Kromě prvků diverzifikace rizika fond Svornost vytváří sílu obsahoval i určité znaky hazardních her. Výnosy z portfolia byly pouze částečně vypláceny investorům. Majitelé cenných papírů trustu měli garantovanou roční dividendu ve výši 4 % (pozn. roční úrokové sazby se v té době však pohybovaly mezi 5-6 %) a zbytek výnosů portfolia fondu se akumuloval na rezervním účtu, přičemž sloužil k umoření jednoho cenného papíru z každé třídy za nominální hodnotu plus prémie ve výši 20 procent. Současně byly také navýšeny budoucí dividendy sousedních cenných papírů. Hazardní prvky ve spojitosti s cennými papíry se nám mohou zdát nezvyklé ze současného pohledu. V 18. století bylo však zcela normální, že cenné papíry obsahovaly rozsáhlé prvky hazardních her.

Podle teorie efektivních trhů by tržní ceny uzavřených fondů měly konvergovat k čisté hodnotě aktiv připadající na jeden cenný papír (angl. net asset value – NAV). Vzniklá diskrepance by měla být pouze krátkodobá, poněvadž vznik rozdílu mezi tržní hodnotou portfolia a tržní cenou obchodovaných cenných papírů by měl vyvolat arbitrážní obchody spekulantů a vytvoření rovnovážného vztahu. Cenné papíry uzavřených fondů akciového typu jsou však obvykle obchodovány na sekundárních trzích s diskontem (tržní cena akcie je menší než čistá hodnota aktiv připadající na jednu akcii). Výjimkou jsou uzavřené fondy krátce po založení, jež

se někdy obchodují s premií. Rovněž dluhopisové fondy se zpravidla obchodují s minimálním diskontem. Diskont uzavřených fondů se obvykle pohybuje inverzně s cenami akcií. Např. v periodách „býčího trhu“ (1968–70 a 1982–86) se diskont tržních cen cenných papírů uzavřených fondů podstatně snížil. Naopak v obdobích „medvědího trhu“ (70. léta nebo krize v roce 1987) došlo k jeho podstatnému zvýšení. Existence diskontu v tržní cenách cenných papírů uzavřených fondů může být vyvolána z několika důvodů. Zásadní vliv mají technické překážky v realizaci arbitrážních obchodů. Cenné papíry uzavřených fondů mají obvykle i nižší likviditu než investiční instrumenty, které jsou obsaženy v jejich portfoliu. Navíc správa uzavřených fondů je spojena s náklady zastoupení (vysoké správní náklady, špatná kvalita managementu, konflikt zájmů), což snižuje jejich tržní ceny. Rovněž může existovat negativní vliv daňového zatížení uzavřených fondů a majitelů jejich cenných papírů. Výše diskontu je také ovlivněna historickou výkonností fondů. I přes výše uvedené důvody se zdá, že diskont v tržní cenách instrumentů uzavřených fondů je vyšší, než by odpovídalo uvedeným faktorům (např. Malkiel, 1977).

Diskont uzavřených fondů měl v posledních letech podle Investment Company Fact Book (2025, s. 77) tendenci k poklesu (např. v roce 2023 diskont uzavřených akciových fondů na americkém trhu činil 7 %, diskont uzavřených dluhopisových fondů dokonce poklesl na 5,2 %).

Institute, které provozují uzavřený model investování, mají zpravidla charakter korporací s vlastní právní subjektivitou¹. Uzavřený model investování však není ve vyspělých státech příliš populární. Domníváme se, že uzavřený model kolektivního investování je vhodný především při investování do instrumentů, které mají nízkou likviditu (např. nemovitosti, málo kapitalizované akciové společnosti, neobchodované dluhové instrumenty nebo investiční instrumenty z nově vznikajících trhů). Největší význam mají uzavřené fondy ve Velké Británii (investment trust) a v USA (closed-end fund), ale i tam jsou v naprosté menšině, což je patrné z tabulky 2. Minimální význam mají uzavřené fondy např. ve Francii (SICAF – Société d'Investissement à Capital Fixe) a Lucembursku (SICAF). V některých státech (např. Německo) byla uzavřená forma investování povolena teprve nedávno.

¹ Výjimkou je např. USA, kde mohou být vytvářeny uzavřené fondy bez vlastní právní subjektivity spravované sponzorem (unit investment trust). Na trhu kolektivního investování však mají zcela okrajový význam. Rovněž český systém kolektivního investování umožňuje vytváření uzavřených podílových fondů bez vlastní právní subjektivity.

4 Zvláštní typy uzavřených fondů

Kromě tradičních uzavřených fondů existují intervalové fondy (angl. interval funds), nabídkové fondy (angl. tender offer funds) a rozvojové fondy (angl. business development funds). Tyto zvláštní uzavřené fondy se liší od tradičních uzavřených fondů zejména tím, že nejsou obchodovány na sekundárních trzích (burzovních nebo OTC). Dále tyto zvláštní typy uzavřených fondů mohou kontinuálně nabízet nové cenné papíry za NAV. V roce 2024 v USA existovalo 393 zvláštních uzavřených fondů podle Investment Company Fact Book (2025, s. 78), přičemž spravují významně větší objem majetku než tradiční uzavřené fondy (tradiční fondy: 249 mld. USD, zvláštní typy uzavřených fondů: 403 mld. USD).

Intervalové fondy mohou průběžně emitovat podíly za NAV, pokud dříve byla uskutečněna počáteční veřejná nabídka. Výrazná většina intervalových fondů není obchodována na sekundárních trzích. Naopak likviditu může investor získat tím, že správce fondu pravidelně organizuje periodické (čtvrtletně, pololetně nebo ročně) výkupní aukce za aktuální NAV. Často jsou intervalové fondy také nabízeny pouze kvalifikovaným investorům, splňující příjmové, majetkové či množstevní požadavky. Ke konci roku 2024 podle Investment Company Fact Book (2025, s. 79) na americkém trhu operovalo 118 intervalových fondů s majetkem 99 mld. USD.

Nabídkové fondy nejsou obvykle kotovány a průběžně emitují podíly za NAV. Většinou jsou nabídkové fondy určeny kvalifikovaným nebo akreditovaným investorům. Výkupní aukce jsou organizovány na diskreční bázi, a to nepravidelně. Ke konci roku 2024 podle Investment Company Fact Book (2025, s. 79) na americkém trhu operovalo 113 nabídkových fondů s majetkem 80 mld. USD.

Rozvojové fondy nejsou v USA registrovány jako fondové jednotky. Obvykle investují do malých a problémových společností, které mají nedostatečný přístup k finančním zdrojům. Rozvojové fondy musí minimálně 70 % aktiv investovat do společností s kapitalizací menší než 250 mil. USD. Rozvojové fondy mohou být buď kotované nebo nekotované. Kotované rozvojové fondy jsou pravidelně obchodovány na sekundárních trzích. Naopak nekotované rozvojové fondy jsou často umísťovány privátním způsobem a kvalifikovaní investoři je často drží 10 i více roků. Ke konci roku 2024 podle Investment Company Fact Book (2025, s. 79) na americkém trhu působilo 162 rozvojových fondů, spravující majetek 225 mld. USD.

5 Otevřené fondy

Otevřený fond (angl. open-end fund) kolektivního investování je charakteristický tím, že počet emitovaných cenných papírů není předem stanoven. Nové cenné papíry jsou emitovány podle poptávky investorů, přičemž investoři mají právo jejich zpětného prodeje emitentům, což výrazně zvyšuje jejich likviditu. Tržní cena

emitovaných cenných papírů není určena na základě nabídky a poptávky na sekundárních trzích, ale vyplývá z každodenního ocenění čisté hodnoty aktiv připadající na jeden cenný papír, což lze vyjádřit následující formulí:

$$NAV = \frac{A - L}{N}, \quad (1)$$

kde

NAV je čistá hodnota aktiv připadající na jeden cenný papír,

A je celková tržní hodnota aktiv,

L jsou celkové závazky, a

N je počet emitovaných cenných papírů.

Předpokládejme, že máme European Fund, jehož celková tržní hodnota aktiv byla po skončení evropského burzovního dne ve 20,00 hod. SEČ 250 mil. EUR, celkové závazky byly 30 mil. EUR a celkově bylo emitováno 45 mil. kusů cenných papírů. NAV pak zjistí depozitář fondu podle výše uvedené formule:

$$NAV = \frac{250 \text{ mil.} - 30 \text{ mil.}}{45} \text{ mil.} = 4,89 \text{ EUR.}$$

Čistá hodnota aktiv připadající na jeden cenný papír je 4,89 EUR.

Prodej nových cenných papírů se zpravidla neuskutečňuje za čistou hodnotu aktiv připadající na jeden cenný papír, ale za emisní cenu. Při prodeji cenných papírů si instituce kolektivního investování připočítávají k čisté hodnotě aktiv připadající na jeden cenný papír určitou přírážku, která je ovlivňována nejen likviditou aktiv portfolia, ale také způsoby distribuce cenných papírů a konkurencí v odvětví kolektivního investování. V posledních letech došlo ve vyspělých státech k výraznému poklesu přírážek nebo dokonce k jejich úplnému zrušení. Zpětný odkup cenných papírů uskutečňují instituce kolektivního investování za odkupní cenu, která se buď shoduje s čistou hodnotou aktiv připadající na jeden cenný papír, nebo je nižší o srážku. Rovněž existuje trend k postupnému opouštění srážek při výstupu z fondu.

Instituce, které provozují otevřený model kolektivního investování, mohou mít odlišné právní postavení, přičemž lze zejména rozlišovat otevřené instituce s vlastní právní subjektivitou nebo otevřené instituce bez vlastní právní subjektivity.

Otevřené instituce s vlastní právní subjektivitou mají charakter korporací, které získávají peněžní prostředky emisí akcií. Shromážděné prostředky pak alokují do různých investičních instrumentů. V tomto uspořádání se investoři stávají akcionáři, přičemž svá práva mohou zpravidla prosazovat na valné hromadě. Tato konstrukce institucí kolektivního investování se používá zejména v USA (mutual fund), ve Velké Británii (open-end investment company), ve Francii (SICAV – Société d'investissement à capital variable), v Nizozemsku (investment company) nebo v Lucembursku (SICAV).

Otevřené instituce bez vlastní právní subjektivity jsou vytvořeny investičními společnostmi, které zpravidla současně spravují portfolia více fondů. Majetek fondu je však oddělen od majetku investiční společnosti. Investor při vložení prostředků není akcionářem investiční společnosti, nýbrž je podílníkem na majetku fondu. Za vložení kapitál dostává investor podílový list (investiční certifikát). Tyto cenné papíry však neoprávňují majitele zasahovat do správy fondu. Otevřené fondy bez vlastní právní subjektivity jsou obvyklé zejména v Německu, ve Švýcarsku, v Rakousku, u některých fondů ve Francii (FCP – Fonds Communs de Placement), v Lucembursku (FCP) nebo v České republice (otevřené podílové fondy).

Zvláštním typem fondů jsou Unit Investment Trusts (UIT fondy). Jedná se o registrované fondy, které jsou kombinací otevřených fondů a tradičních uzavřených fondů. Podobně jako otevřené fondy, tak emitují cenné papíry se závazkem zpětného odkupu. Současně vydávají pouze omezený počet cenných papírů. Cenné papíry Unit Investment Trusts mají také stanovený termín, ve kterém lze uplatňovat odkupní právo. UIT fondy jsou akciového nebo dluhopisového typu, přičemž zcela dominantní roli mají akciové fondy (95 %). Brokerské firmy, správci fondů či investiční prostředníci často oznamují indikativní ceny UIT fondů.

Tab. 2 Celková hodnota aktiv otevřených institucí kolektivního investování (svět, 1998, 2024, v mld. USD)

Kontinent/Země	Hodnota aktiv 1998	Hodnota aktiv 2024
Svět	9 595	73 862
Amerika	5 867	42 615
USA	5 525	38 842
Brazílie	-	1 483
Evropa	2 743	22 965
Lucembursko	508	6 046
Francie	626	2 599
Velká Británie	278	2 133
Německo	190	2 726
Česká republika	0,6	30
Asie a Pacifik	972	8 077
Austrálie	295	2 645
Čína	-	3 977
Japonsko	377	2 344

Zdroj: Investment Company Fact Book (2025).

Tab. 3 Hodnota aktiv fondů (USA, 1929–2024, v mld.USD)

Rok	Tradiční uzavřené fondy	Otevřené fondy
1929	2,9	0,1
1940	0,6	0,5
1950	0,9	2,5
1960	2,1	17,0
1970	4,0	47,6
1987	20,5	769,9
1995	135,7	2 811,5
2000	164,7	7 269,1
2005	276,0	8 905,0
2009	228,0	11 121,0
2015	263,0	15 648,0
2020	277,0	23 834,0
2024	249,0	28 537,0

Zdroj: Investment Company Fact Book (2025).

6 Boom otevřených fondů

Ve vyspělých státech se v posledních dekadách enormně zvýšila popularita otevřeného kolektivního investování, což dokumentují následující tabulky. Naopak je evidentní, že výrazně stagnují tradiční uzavřené fondy.

Výrazně rostoucí poptávka po otevřených fondech má multi-faktorový charakter, přičemž mezi nejdůležitější faktory pravděpodobně patří:

I. Historická výnosová míra z otevřených fondů. Racionálně se chovající domácnosti se snaží maximalizovat celkovou výnosovou míru ve vztahu k riziku a likviditě celkového finančního majetku. Výnosová míra z otevřených fondů přináší v posledních dekadách dlouhodobě výrazně nadprůměrné investiční výsledky, a to zejména při investování do akciových nebo balancovaných fondů.

II. Diverzifikované riziko otevřených fondů. Investičně gramotné domácnosti ve vyspělých státech více poptávají rozsáhle diverzifikovaná portfolia otevřených fondů, přičemž se zejména zaměřují na indexované otevřené fondy akciového typu.

III. Likvidita. Extrémně vysoká likvidita otevřených fondů je zabezpečována na základě práva zpětného prodeje majitelů cenných papírů otevřených fondů za aktuálně zjištěnou NAV, která se stanoví každodenně, v poslední době někdy i několikrát během obchodního dne.

IV. Kapitálově financované důchodové systémy. Značnou poptávku po otevřených fondech mají domácnosti v ekonomikách s reformovaným důchodovým systémem (tzn. s výrazným podílem kapitalizovaných pilířů), kdy správci penzijních aktiv často využívají otevřené fondy jako investičně-penzijní instrumenty pro své klienty, kterým spravují penzijní aktiva.

V. Pokles nákladů. Mimořádný zájem o investování do otevřených fondů je z velké části vyvolán výrazným poklesem ukazatele celkových nákladů (angl. total expense ratio – TER), což je patrné z níže uvedených tabulek.

Tab. 4 Ukazatel TER akciových fondů (EU, vážený průměr, 2013–2023)

Rok	Hodnota ukazatele v %
2013	1,49
2022	1,17
2023	1,17

Zdroj: Investment Company Fact Book (2025).

Tab. 5 Ukazatel TER dluhopisových fondů (EU, vážený průměr, 2013–2023)

Rok	Hodnota ukazatele v %
2013	0,98
2022	0,66
2023	0,67

Zdroj: Investment Company Fact Book (2025).

Pokles ukazatele TER je ovlivněn několika faktory. Za prvé, v posledních dekáдах došlo zejména v USA k výraznému vzestupu poptávky po fondových produktech, kde nejsou účtovány žádné (nebo minimální) vstupní či výstupní poplatky. Za druhé, výrazně roste poptávka po indexovaném investování (indexované fondy a ETF produkty), přičemž pasivní správa portfolia je spojena s výrazně nižšími obhospodařovatelskými náklady oproti aktivně spravovaným fondům. Podle Investment Company Fact Book (2025, s. 87) na americkém trhu podíl indexované správy vzrostl z 19 % v roce 2010 na 51 % v roce 2024. Za třetí, dochází ke koncentraci správy majetku, což se projevuje úsporami z rozsahu při obhospodařování spravovaných otevřených fondů.

7 Závěr

Institucionální uspořádání fondů kolektivního investování může být realizováno uzavřenou nebo otevřenou formou. Vznik kolektivního investování je spojen s uzavřenou podobou, kdy holandský kupec Abraham van Ketwich nabídl

investorům v Amsterdamu v roce 1774 úpis podílů uzavřeného fondu Svornost vytváří sílu, přičemž likviditu podporovaly sekundární trhy za tržních podmínek na základě střetnutí nabídky a poptávky. Teprve inovace ve formě zavedení práva zpětného prodeje za NAV, která byla poprvé použita v Bostonu v roce 1924 fondem The Massachusetts Investors Trust, otevřelo alternativní zajištění likvidity. Inovace na investičních trzích vznikají téměř každý obchodní den, avšak minimum z nich se ukáže, že jsou potřebné a užitečné. Mezi jednu z průlomových inovací ve světě investování jistě patří otevřené fondy s právem zpětného prodeje za čistou hodnotu aktiv (NAV). Převládající výhody tohoto uspořádání jednoznačně dokazuje tržní chování investičních participantů: dlouhodobý boom poptávky po otevřených fondech a stagnace poptávky po tradičních uzavřených fondech.

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Closed-end funds or Open-end funds?

Petr Musílek

Abstract:

The paper discusses the issue of development the position of individual types of investment funds. The introductory part of the paper discusses the more detailed characteristics, advantages and risks of collective investment funds. The paper discusses key milestones in the development of the institutional arrangement of collective investment. The advantages and disadvantages of closed-end and open-end funds are also analyzed. The final part of the paper analyzes the reason for the boom of open-end funds compared to closed-end funds in recent decades.

Keywords: Collective investments; closed-end funds; open-end funds; net asset value.

JEL Classification: G23.

IFRS 15 Implementation and Impact: Systematic Literature Review

Anita Tenzer *

Abstract:

The literature review integrates findings from 32 studies which examined IFRS 15 adoption effects on different countries and industries. The implementation of IFRS 15 has achieved its main goal of creating better revenue recognition standards which enhance financial reporting excellence and transparency and promote comparability. The review demonstrates how IFRS 15 adoption modified revenue recognition timing while improving earnings quality and reducing earnings manipulation in industries with complex long-term contracts such as construction and telecommunications. The transition process was smoother for those companies serving developed markets but emerging economies had to contend with more issues due to scarce resources and lax enforcement mechanisms. Empirical evidence indicates that comparability and decision-usefulness of financial statements enhanced post-adoption but inconsistent disclosure practices and management judgment reliance remain issues. Research gaps with respect to longitudinal studies and user-behavioral responses are indicated in the review and provide avenues for further research.

Klíčová slova: IFRS 15; Revenue recognition; Financial reporting quality; Comparability; Earnings Management.

JEL klasifikace: M41, F65.

1 Introduction

Revenue recognition is central to financial reporting, but before IFRS 15 the landscape was a patchwork of prescriptive rules that often masked the economic reality and allowed scope for earnings manipulation (Napier & Stadler, 2020). The issuance of IFRS 15 Revenue from Contracts with Customers, which was published in May 2014 alongside the respective U.S. GAAP counterpart standard (ASC 606) and became obligatory on January 1, 2018 (with early adoption permitted), replaced IAS 18 and IAS 11, thus remedying this fragmentation by creating a single principle-based framework centred on the concept of transfer of control (IASB, 2014). By shifting from the former "risks and rewards" approach to one based on the satisfaction of performance obligations, the new standard sought to improve

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comparability and transparency, and limit scope for manipulation (Sharma et al., 2014; Napier & Stadler, 2020).

Within the IFRS architecture at large, IFRS 15 belongs to the core standards. It anchors how entities think about revenue and, in practice, tracks closely with the IASB's Conceptual Framework (2018). The standard grew out of the long IASB/FASB project on revenue and by the time IFRS 15 was issued in 2014 (effective 2018), the aim was clearer: more consistent, transparent, and decision-useful reporting across jurisdictions. Seen in that light, IFRS 15 is best read alongside IFRS 9 Financial Instruments and IFRS 16 Leases. The three do not form a technical package, yet they share a principles-based posture and a concern for faithful representation of the underlying economics. IFRS 15 is therefore more than a tidy rewrite: it is one strand in the IASB's longer move toward a coherent, conceptually grounded system (Barth, 2018). And because it was developed with the FASB and aligned with ASC 606, it marks a notable moment in IFRS–US GAAP convergence.

Looking more closely at IFRS 15 offers a useful way to see how international accounting rules put broad ideas, such as comparability, consistency, and faithful representation, into practice across different reporting environments. Rather than being only a technical update, the standard has become a case through which to observe how well conceptual goals survive once they meet national institutions and enforcement systems. Recent research has questioned whether IFRS 15 actually achieved those aims or, conversely, created new areas of ambiguity and uneven application (Kabir & Su, 2022). By reviewing the growing body of empirical evidence, this study adds to the ongoing conversation about how effective and credible international accounting standards really are as tools for coordinating financial reporting on a global scale.

This review synthesises the fast-growing international evidence on the effects of IFRS 15. The examples encompass evidenced improvements in financial statement comparability in Korea (Lee & Choi, 2024) and evidence of reduced earnings management in the COVID-19 pandemic by reporters following IFRS compared to their U.S. GAAP counterparts (Yassin et al., 2022). In addition, it outlines areas where the standard has been shown to succeed, areas of inconclusive results, and areas where research gaps still persist. For researchers, the review summarises the theoretical and methodological advances within this field while identifying research questions insufficiently addressed. For practitioners, it presents an evidence-based evaluation of successful applications, probable issues, and emerging best practices to guide standard-setting, audit planning, and managerial policy. In this way, the review contributes to academic understanding about the effectiveness of accounting standard-setting and implementation complexities in varying settings. At the same time, it gives regulators, auditors, and corporate executives clear insights into the

degree to which the standard is realising its transformative promise and the pathways through which this happens.

In brief, IFRS 15's purpose is to provide principles for reporting useful information regarding the nature, amount, timing, and uncertainty of revenue and related cash flows arising from customer contracts (IASB, 2014). In line with the IASB's desired outcomes, the standard was anticipated to: (1) enhance comparability of revenue recognition across entities, industries, jurisdictions, and capital markets; (2) eliminate the need for case-by-case interpretive guidance with a complete, principles-based approach; and (3) provide more decision-useful information through increased disclosure requirements (IASB, 2014; IASB, 2023). Empirical studies have since investigated whether these objectives have indeed manifested in the form of outcomes like increased reporting quality and less earnings management (e.g., Napier & Stadler, 2020; Lee & Choi, 2024; Yassin et al., 2022).

The main objective of this article is to consolidate the findings of empirical research on the implementation of IFRS 15 in different geographical areas and industrial sectors, providing thereby a comprehensive insight into the effects of IFRS 15 on financial reporting practice and outcomes worldwide. The secondary objective is to analyse and highlight inconsistencies or gaps in these findings, such as differences reported between developed and developing economic environments (Grosu et al., 2022; Ogunode & Salawu, 2021) or differences between transactions with high and low complexity. More specifically, the following research questions are answered:

1. What have been the effects of IFRS 15 adoption on financial reporting results, including revenues, earnings, and comparability of financial statements, reported across industries and geographies?
2. In what ways has IFRS 15 adoption affected the quality of financial reporting and of reported earnings, specifically regarding earnings management, earnings quality, and other measures of financial reporting quality?
3. What implementation barriers and challenges have organisations and auditors encountered in using IFRS 15, and how do these differ in different settings (e.g., between countries or industries)?
4. To what extent have the objectives of comparability, consistency, and transparency of revenue recognition as prescribed in IFRS 15 been achieved, based on the findings of the current body of literature?

The structure of the paper is as follows. Section 2 introduces the conceptual foundations of IFRS 15, mapping its scope, core principles, and the five-step revenue model. It concludes with Section 2.1, which contrasts early adopters with entities that waited until the mandatory effective date. Section 3 provides details of the systematic review design, describing the PRISMA-guided search strategy, inclusion criteria, and descriptive statistics that frame the evidence base. Section 4 synthesises empirical findings on the standard's financial-reporting consequences,

examining 4.1 changes in revenue and earnings-quality metrics; 4.2 shifts in cross-firm comparability; 4.3 progress toward global harmonisation; 4.4 alterations in the timing and pattern of revenue recognition; and 4.5 the decision-usefulness of the expanded disclosure regime. Section 5 broadens the lens by first comparing implementation experiences across jurisdictions, then analysing industry-specific effects in construction, telecommunications, software, healthcare, banking, and other sectors. Section 6 reviews the methodological approaches that dominate the literature before pinpointing unresolved research questions and under-explored contexts. Finally, Section 7 summarises the review's principal insights, reflects on the mixed success of IFRS 15 in achieving its objectives, and outlines directions for future enquiry and practice.

2 Overview of IFRS 15 Implementation: Scope, Principles, and Evolution of Revenue Recognition

IFRS 15 applies to all contracts with customers unless other standards apply, marking a notable evolution in how revenue is recognised. The aim was to create a consistent framework for revenue reporting across sectors, tackling problems with previous regulations. Implementation involves a five-step model:

1. Identify the contract(s) with a customer.
2. Identify the performance obligations.
3. Determine the transaction price.
4. Allocate the transaction price to performance obligations.
5. Recognise revenue when (or as) performance obligations are satisfied.

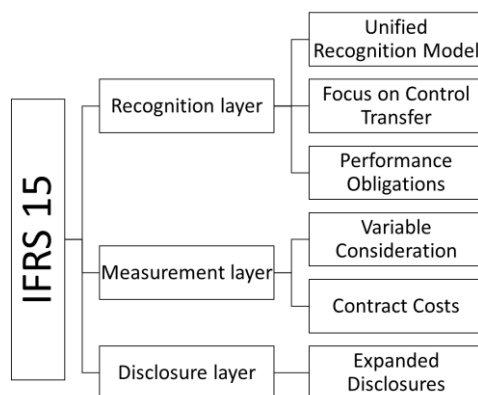
This principles-based methodology enhances comparability, providing stakeholders with a better understanding of revenue streams and reducing earlier ambiguities (Blanchette et al., 2011). With ongoing IFRS 15 adoption, entities need to diligently review contracts for applicability. Omissions can drastically change reported revenues. This change brings us in sync with international norms and necessitates revisiting current practices and controls, which highlights ongoing application and implementation issues (Phillips, 2010). Revisiting current accounting practices is extremely important.

Real-world applications of this model have brought to light the imperative necessity for technical training and interpretation, especially in complicated contractual situations. McNellis, Barone, and Herbold (2020) performed a case study in which financial experts worked through complicated contractual language using a five-step process. They reasoned that even experienced practitioners may not be able to identify performance obligations or properly allocate variable consideration without explicit guidelines or adequate experience—emphasising the importance of effective preparer education in conjunction with standard implementation.

IFRS 15 introduced several fundamental changes compared to previous standards (Figure 1):

- **Unified Recognition Model:** A single model replaced disparate rules for goods, services, and construction contracts (Napier & Stadler, 2020).
- **Focus on Control Transfer:** Recognition shifted from risk and rewards transfer to control transfer, which had a considerable effect on industries such as construction and real estate (Kabir & Su, 2022).
- **Performance Obligations:** Entities must separately identify unique goods or services, leading to the disaggregation of contracts, particularly in the telecommunications and software industries (Boujelben & Kobbi-Fakhfakh, 2020).
- **Variable Consideration:** Specific guidance on estimating and constraining variable consideration reduced aggressive revenue recognition practices (Yassin et al., 2022).
- **Contract Costs:** IFRS 15 introduced capitalisation rules for costs of obtaining and fulfilling contracts, enhancing the matching of revenues and expenses (Grosu et al., 2022).
- **Expanded Disclosures:** Companies are required to provide detailed disclosures on revenue disaggregation, contract balances, and performance obligations, improving transparency (Coetsee, Mohammadali-Haji, Van Wyk, 2022).

Fig. 1 IFRS 15 fundamental changes compared to the previous standards



Source: Author, based on the literature review.

2.1 Early Versus Mandatory Adoption Trends

Evidence supports that larger and more profitable firms with good governance structures were among the first to adopt new standards (Quagli et al., 2021), which corroborates the findings of Aladwey and Diab (2023). What was the driver of such

action? It was the desire to demonstrate transparency to stakeholders and reduce information asymmetry, as well as adherence to U.S. GAAP globally (Trabelsi, 2018). For instance, Dubai's real estate companies witnessed a remarkable enhancement in the quality of accounting information following early adoption of IFRS 15—a clear signal of the advantages that accrue to timely compliance (Trabelsi, 2018). By the way, in the setting of emerging economies, these early adopters also demonstrated enhanced corporate governance and greater profitability, and thereby, they reestablished the connection between timely adoption and organisational performance supremacy (Aladwey & Diab, 2023).

However, many companies delayed adoption, commonly citing operational difficulties and probable negative financial statement effects on transition. Required adoption has realised far greater consistency worldwide, though Boujelben and Kobbi-Fakhfakh (2020) added disclosure quality convergence differed considerably between areas and sectors initially. Additional post-implementation studies in the years to come, especially with respect to early versus required adoption trends (Chen, 2024), will be needed for resolving remaining problems and ensuring its continued applicability in the face of changing business practices.

3 Review method and descriptive data

A review of implementation IFRS 15 literature was conducted, focusing on the impacts of IFRS 15 and their interactions with a variety of actors, where a systematic literature review approach was implemented to comprehensively identify, appraise, and synthesise all relevant studies on the topic (Petticrew & Roberts, 2008). The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 framework (Page et al., 2021) guided our reporting to ensure transparency.

Scopus was selected as the sole information source because of its broad journal coverage. Records published between January 2015 and December 2024 were searched using the query “IFRS 15”, and the query “revenue recognition” AND “IFRS” applied to titles, abstracts and keywords. Since IFRS used to be called IAS, we also used the query IAS 15 for comprehensiveness, in case the standard was accidentally mislabelled in the keywords. This query led to one additional relevant record. No automated text-mining tools were used; searches were performed manually.

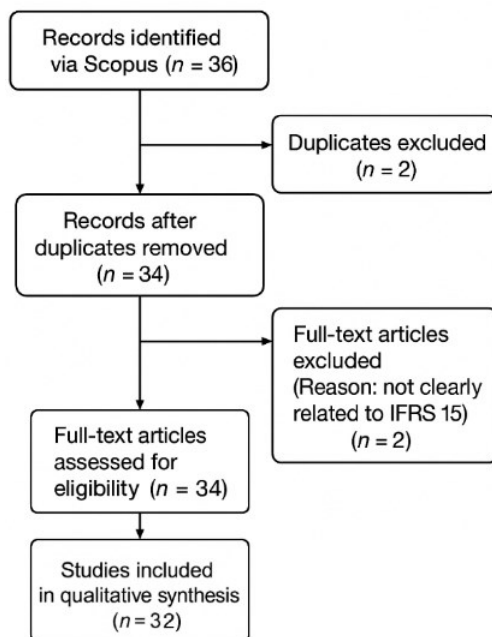
Studies had to meet four inclusion criteria:

1. Publication type – peer-reviewed journal article indexed in Scopus.
2. Language – English.
3. Period – 2015 – 2024 (including post-issuance research window).
4. Topical focus – empirical, theoretical or review work explicitly analysing IFRS 15 or revenue-recognition issues in an IFRS context.

Papers failing any criterion were excluded. One article retrieved by keywords was excluded at full-text review because it did not analyse IFRS 15.

Following PRISMA guidance (Page et al., 2021), a two-stage screening was undertaken. Titles and abstracts were screened against the inclusion criteria. Full texts of potentially relevant papers were then examined in detail. 32 articles satisfied all criteria and were included in the qualitative synthesis; two excluded at full-text stage for irrelevance, producing the counts shown in the PRISMA flow diagram (Figure 2).

Fig. 2 PRISMA flow diagram – IFRS 15 implementation review



Source: Author.

For each included study was captured: author(s), year, region/country, industry context, study objective and research method. Owing to heterogeneity in design and outcomes, was performed a narrative synthesis, comparing themes such as compliance challenges, earnings-quality effects, disclosure changes and governance implications across different jurisdictions and sectors. The 32 studies span 27 journals in accounting, business management, economics and governance, demonstrating the multidisciplinary interest in IFRS 15, as illustrated in Table 1.

Tab. 1 Distribution of journal papers

Field	Title	Number of Papers
Accounting	Accounting and Finance	1
	Accounting and Finance Letters	1
	Universal Journal of Accounting and Finance	1
	International Journal of Disclosure and Governance	2
	Journal of Applied Accounting Research	1
	Journal of International Accounting, Auditing and Taxation	2
	Qualitative Research in Financial Markets	1
	Academy of Accounting and Financial Studies Journal	1
	Accounting Perspectives	1
	Accounting and Business Research	1
	Advances in Accounting	1
	Asian Review of Accounting	1
	Australasian Accounting, Business and Finance Journal	1
	Issues in Accounting Education	3
	Journal of Financial Reporting and Accounting	1
	South African Journal of Accounting Research	1
Business & Management	Cogent Business and Management	2
	African Journal of Hospitality, Tourism and Leisure	1
	Revista Brasileira de Gestão de Negócios	1
	SN Business and Economics	1
	Review of Integrative Business and Economics Research	1
	WSEAS Transactions on Business and Economics	1
Economics	International Journal of Economics and Finance Studies	1
	Engineering Economics	1
Mathematics	Italian Journal of Pure and Applied Mathematics	1
	Journal of Risk and Financial Management	1
Governance	Journal of Governance and Regulation	1
Total		32

Source: Author.

A review of the methodological approaches (Table 2) used in the examined body of literature indicates that most studies on accounting and financial reporting rely on data-driven, quantitative designs. Among the thirty-two papers analysed, fourteen employ empirical analyses, typically using panel data, regression techniques, or other statistical procedures to test relationships between accounting standards and financial outcomes. Another substantial group of studies, six in total, relies on survey methods, gathering perceptions and professional judgments from practitioners, auditors, or managers to complement the numerical evidence. Case studies account for five papers and provide detailed insights into organisational contexts or specific implementation processes of IFRS standards, helping to bridge the gap between theoretical assumptions and practice.

A smaller portion of the literature, represented by four papers, applies content analysis to investigate disclosure quality or reporting transparency in corporate documents. Only one paper used a qualitative empirical design, relying on interviews and interpretative techniques. Finally, two papers develop theoretical models that conceptualise relationships among key accounting variables without relying on empirical data. Taken together, this distribution of methods suggests that research on IFRS and financial reporting is still dominated by quantitative and positivist traditions, while interpretive and conceptual approaches play a more limited, yet complementary, role in the ongoing academic discussion.

Tab. 2 Distribution of research methods used in the reviewed papers

Method	Number of papers
Case Study	5
Content Analysis	4
Empirical Analysis	14
Qualitative Empirical Study	1
Survey	6
Theoretical Model	2
Total	32

Source: Author.

The geographical context of the reviewed studies is presented in Table 3. According to the statistics 18 % of the research focuses on Anglo-Saxon settings—1 study in the UK, 3 in North. America, and 2 in Australia & New Zealand, while 15 % adopt an international or multi-country perspective. Asian contexts (East, Southeast & South Asia) account for 18 % of the sample, and Middle East for 15 %. Research on European countries outside the UK represents 6 %, and African contexts 12 %.

Notably, there are no studies from Central Asia. This distribution underscores both the predominance of transnational analyses and the relative under-coverage of specific regions, suggesting opportunities for more comparative and developing-country research.

The uneven geographical spread of IFRS 15 research is not accidental. The stronger presence of Asian, Middle-Eastern, and African studies reflects where IFRS standards are applied directly and where the adoption process still generates visible diversity in practice in comparison to the more mature and institutionally stable IFRS reporting environments of European countries (Karim & Riya, 2022; Grosu et al., 2022). As for U.S., it has also much to do with the standard's shared roots with the U.S. ASC 606, developed through a joint project of the IASB and FASB and applied in most jurisdictions from 2018 onward. Although the two standards follow the same underlying principles, differences in national reporting regimes help explain why scholars have focused on some regions more than others. U.S.-domiciled listed companies follow U.S. GAAP and therefore report under ASC 606, while IFRS reporting in the United States is confined to foreign private issuers listed on U.S. exchanges (SEC, 2007). As a result, empirical studies originating in the U.S. generally focus on ASC 606 rather than IFRS 15.

Tab. 3 Regional analysis of the reviewed papers

Region of Investigation ¹	2015–2018	2019–2024	Total (%)
United Kingdom	0	1	1 (3 %)
United States	2	1	3 (9 %)
Latin America (Brazil)	0	1	1 (3 %)
Europe (excluding UK)	0	2	2 (6 %)
Australia & New Zealand	1	1	2 (6 %)
Asia (East, Southeast & South)	1	5	6 (18 %)
Middle East	1	4	5 (15 %)
Africa	0	4	4 (12 %)
International	0	5	5 (15 %)
General	0	3	3 (9 %)
Total	5	27	32 (100 %)

Source: Author.

¹ Asia (East, Southeast & South) includes Bangladesh, China, Malaysia, South Korea, Thailand and India. Middle East includes Jordan, Iraq, and the United Arab Emirates. African countries include South Africa, Egypt, and Nigeria. International refers to studies conducted across multiple countries or regions.

4 Impacts of IFRS 15 on Financial Reporting

This chapter investigates the impacts of IFRS 15 from the perspective of its objective to establish principles an entity applies to report useful information about the nature, amount, timing, and uncertainty of revenue and related cash flows from customer contracts speaks directly to what capital-market users need to assess performance and prospects (IASB, 2021). At the same time, the IASB's post-implementation review (PIR) clarifies the standard-setters' intended effects: a comprehensive, robust framework expected (i) to improve comparability of revenue recognition across entities, industries, jurisdictions, and capital markets, (ii) to reduce the need for case-by-case interpretive guidance, (iii) to enable more useful information through improved disclosure requirements (IASB, 2014). These twin anchors, objective and intended effects, define the following chapters. Sections 4.1 (quality of reported revenue), 4.4 (timing and pattern of recognition), and 4.5 (decision-usefulness) examine the direct implications of the objective, whether IFRS 15's five-step model and disclosure regime curb opportunistic reporting, align recognition with performance obligations over time versus at a point in time, and yield more decision-relevant information about uncertainty and cash-flow profiles. Sections 4.2 (comparability) and 4.3 (harmonisation) evaluate the system-level aims emphasised in the PIR cross-entity and cross-jurisdiction consistency, and the dampening of ad hoc interpretive fixes that historically fragmented practice, thereby assessing whether IFRS 15's unified principles have delivered the comparability and reporting discipline the IASB envisaged (IASB, 2023). By juxtaposing these objective-driven and PIR-articulated outcomes, the chapter provides a structured, empirical assessment of how IFRS 15 has reconfigured revenue recognition, disclosure, and the broader informativeness of financial reporting.

4.1 Studies Examining Changes in Quality of Reported Revenue

The effect of IFRS 15 on the quality of financial reporting is not straightforward, and studies have had mixed findings based on the specific environment. More precisely, Chen (2024) demonstrated that the adoption of IFRS 15 in China led to improvements in revenue and earnings quality. This is because the standard was successful in precluding earnings management—practices that are commonly employed to mask a firm's true economic position. The emphasis placed on performance obligations and contract-based recognition limited management discretion over the timing of revenue recognition, which, in turn, led to more faithful representations of actual economic activity, thereby increasing the usefulness of financial statements. In the Iraqi hospitality industry as well, Hameed, Al-Taie, and Al-Mashhadani (2019) found a positive effect on earnings quality owing to IFRS 15 in that it mitigated the scope for income smoothing. They found a decrease in so-called abnormal accruals following the adoption of the standard, reflective of the presentation of more credible financial information and of greater stakeholder trust.

Notwithstanding the above positive attributes, it is worth mentioning that the overall image is not all positive; Yassin et al. (2022) discovered that, amidst the COVID-19 pandemic, firms that applied both IFRS and U.S. GAAP employed earnings management strategies, an observation implying that exceptional external factors might weaken the ability of these standards in preventing opportunistic financial reporting. In addition, Soodsook et al. (2024), through their Thai study, illustrated that companies engaged in complex business transactions did not show a notable improvement in earnings quality. This translates to the fact that complex contractual structures can destroy the intended effect of IFRS 15. Concisely, such contrasts highlight the importance of an insight into the manner in which different market environments and organisational settings can affect the effectiveness of IFRS 15 in improving the quality of revenue reporting.

4.2 Empirical Evidence on Comparability Pre- and Post-Adoption

More broadly, an overriding motivation for IFRS 15 was the desire to improve the comparability of financial reporting across firms and industries. Indeed, Lee and Choi's (2024) paper presents strong Korean evidence that the adoption of IFRS 15 radically improved the cross-sectional comparability of financial reporting across industries. Their large-scale empirical investigation showed improvements both within and across industries and accounted for this largely in terms of the introduction of a coherent framework of revenue recognition that replaced the erstwhile fragmented practices.

Conversely, Boujelben and Kobbi-Fakhfakh (2020) found that there were still complexities within the telecommunications industry, despite the enhanced general comparability. This was suggestive of divergent interpretations and applications of the standard by companies. For this reason, a sector-based analysis is necessary to assess the effects of IFRS adoption.

4.3 Whether IFRS 15 Achieved Its Aim of Harmonising Reporting

Cumulatively, empirical studies confirm that IFRS 15 has succeeded to a great extent in its objective of promoting international harmonisation of revenue recognition approaches. In an extensive study covering a number of emerging economies, Grosu et al. (2022) observed that while there were considerable challenges in the early phases of its adoption, IFRS 15 has played a key role in facilitating convergence with global best practices over time.

That said, one has to remember that problems persist. Differences between sectors and inconsistencies within national enforcement environments still affect the implementation fidelity. As a result, this makes the wider goal of harmonisation between jurisdictions more challenging. All this indicates that, despite progress, the complete realisation of IFRS 15's aims of harmonised reporting is an ongoing

process with a need for constant reviewing and revising (Cole et al., 2009), (Brüggenmann et al., 2012).

4.4 Changes in Timing and Pattern of Revenue Recognition

Since the adoption of IFRS 15, a key question has been its effect on the timing and pattern of revenue recognition. Kabir and Su (2022), for example, studied Australian and New Zealand companies and identified significant changes in the timing of revenue recognition. The changes were most pronounced in technology and telecommunication, with revenue often recognised earlier as a result of identifying performance obligations fulfilled over a period instead of a point in time. Share prices of early adopters of IFRS 15 also changed, as observed by Aladwan (2019), which further suggests that markets are sensitive to perceived shifts in revenue profiles; this also calls for a more detailed examination of financial reporting. Trabelsi (2018) discovered that in Dubai's real estate market, early adoption sometimes resulted in revenue deferral relative to local GAAPs. This already shows that the impacts of IFRS 15 may be sector-specific. These differing sector-specific effects thus need to be examined more closely in order to determine IFRS 15's general effect on patterns of revenue recognition in various industries.

4.5 Decision-usefulness of financial reports under IFRS 15

A fundamental consideration in relation to any accounting standard changes is whether the changes can improve the decision-usefulness of financial statements. IFRS 15, together with its comprehensive disclosure requirements, was specifically designed to improve users' understanding of revenue sources, major judgments, and various attributes of contracts; hence, it aims to increase the general usefulness of financial statements. Empirical evidence seems to support this statement. For instance, Haddad and Dammak (2023) explained that in Iraq, the additional revelations with IFRS 15 indeed positively affected investor decision-making, depicting more informativeness and helping stakeholders make more informed decisions. A related study by Coetsee, Mohammadali-Haji, and van Wyk (2022) examined companies in South Africa, where the more extensive disclosures according to IFRS 15 were seen by analysts as significantly more useful for their decision-making, especially in relation to the nature, timing, and inherent uncertainties of revenue streams.

However, it is important to note several continuing limitations. According to Karim and Riya (2022), firms in emerging economies generally showed only a level of compliance with the strict disclosure requirements, thus limiting the benefits of the standard in these respective settings.

The literature reviewed reveals the following major impacts of IFRS 15 on financial reporting:

- **Quality Improvement:** IFRS 15 improved the quality of revenue disclosures significantly, hence helping to decrease earnings management in different markets. The benefits, though, were not that pronounced for companies involved in complex transactions or when there were external crises (Chen, 2024; Hameed et al., 2019).
- **Increased Comparability:** The use of one model has increased the comparability of financial statements across various corporations and industries amidst variations in interpretation and idiosyncratic characteristics unique to specific industries (Lee & Choi, 2024; Boujelben & Kobbi-Fakhfakh, 2020).
- **Timing and Patterns:** The timing of revenue recognition changed in most industries, especially technology and services, leading to earlier or more patterned revenue recognition patterns (Kabir & Su, 2022).
- **User Informativeness:** Financial reporting grew more informative in most instances, supporting users' decision-making, but lack of consistent compliance in some jurisdictions continues to be a hindrance (Coetsee et al., 2022; Karim & Riya, 2022).

5 Cross-Country and Industry Perspectives – IFRS 15 Implementation and Outcomes

This chapter reviews the literature on how IFRS 15 has been implemented in various national contexts and industries, the effects on financial reporting quality, and what case studies reveal about challenges and outcomes.

5.1 Geographic Variations in IFRS 15 Implementation

An analysis of the geographical distribution of research related to IFRS 15 shows a strong presence of emerging markets; this reflects the various challenges and results of its implementation. Empirical research has concentrated on nations such as Brazil (de Souza et al., 2022), Thailand (Soodsook et al., 2024), and Jordan, presenting enlightening results on the implementation challenges in less developed regulatory settings. Most often, these studies refer to deeper systemic issues, e.g., low proficiency among preparers and the presence of weak enforcement mechanisms, which may impede effective application of the newly formulated standards. For instance, Soodsook et al. (2024) established that IFRS 15 adoption in Thailand led to earnings quality improvement, notably through increased predictability and reduced earnings volatility, thus pointing to the potential gains of the standards under similar circumstances. Similarly, Salameh et al. (2022) established significant improvement in disclosure quality by Jordanian construction companies' post-adoption, echoing the perspective that IFRS 15 can yield desired impacts, even for emerging markets, as long as adequate support to companies is facilitated during the transitional periods.

Evidence from developed markets, while less plentiful, offers useful comparative perspectives that inform the discussion on the global ramifications of IFRS 15. According to Lee and Choi (2024) there were improvements in the consistency of financial reporting in Korea after the implementation of IFRS 15. Different results reported Kabir and Su (2022), who examined companies in Australia and New Zealand. They found that only around 36% reported significant impacts. This reflects differences in implementation even among developed markets. It is relevant to note that Western Europe and North America seem underrepresented in the current scholarly literature, which could be due to the perception that IFRS 15 poses fewer issues—a premise worth investigating to fully grasp geographic differences (Chen, 2024). Even so, singular examples from North America reveal sector-specific difficulties. In the digital gaming industry, for instance, Conrod and Cumby (2016) discussed how the principles of IFRS 15 created interpretive challenges on recognising virtual products and subscription-based services. Their findings suggest that even within sophisticated reporting environments, revenue recognition under IFRS 15 can be complicated when applied to non-traditional products or innovative delivery models.

Thus, the focus on emerging markets yields fertile contextual information but points to the necessity of more even geographical coverage, especially longitudinal and comparative research in industrialised economies.

5.2 Challenges in IFRS 15 Implementation

Countries with a long history of established accounting rules have found IFRS 15 harder to apply. Progress toward adoption has been uneven across the globe. Differences in local regulation, economic strength, and the presence of other standards can influence how IFRS 15 is taken up. In Europe, many large companies were ready by the time the standard took effect in 2018. Even so, research carried out beforehand showed that preparation was uneven. Some firms had already set up detailed disclosure processes. Others were still working to meet the new requirements (Salameh et al., 2022).

The implementation of IFRS 15 has unfolded unevenly across the world, and emerging economies have faced a particularly steep climb. In several of these markets, the standard has taken hold slowly; early assessments predicted that full compliance might be years away. Grosu et al. (2022) reported that many firms lacked the detailed guidance needed to apply the rules correctly. Where national reporting systems are still developing, meeting disclosure requirements has proved difficult. In one case examined, companies worked to align with the standard yet rarely achieved full conformity. Karim and Riya (2022) attribute these gaps to both limited organisational resources and the complexity built into the standard itself.

When IFRS-based systems are compared with those using US GAAP, the differences become clearer. During the COVID-19 pandemic, Yassin et al. (2022)

looked at companies in Jordan, which uses IFRS, and in the United States, which applies GAAP. In both settings, managers adjusted revenue recognition to manage earnings, but the methods differed. IFRS companies tended to make changes to both current and future contracts, while GAAP firms focused mainly on future ones.

Even with IFRS 15 and its GAAP equivalent, ASC 606, aiming for closer alignment, managers often end up applying the rules in different ways. Cultural habits and how strictly the rules are enforced may help explain this. A US study on managers' readiness to work with IFRS revenue recognition backs up the point. Bierstaker, Kopp, and Lombardi (2016) found that many struggled with the principles-based method and instead reverted to the GAAP approach they were used to. Switching to IFRS can be tough, especially in technical areas such as revenue recognition.

Country-level research also emphasises geographic variation in the implementation of IFRS 15. Within the Asia-Pacific region, Australia and New Zealand completed the implementation of IFRS 15 on time; studies demonstrated that companies in both nations significantly changed revenue recognition practices and financial statement presentations following adoption, attesting that companies altered accounting policies and estimates in order to meet the requirements of the new standard (Kabir & Su, 2022). More generally, Edeigba and Amenkhienan (2017) document that requiring IFRS enhanced comparability of reporting by New Zealand's largest firms but left enduring gaps in disclosure among smaller ones. That is, New Zealand's experience with IFRS 15 adoption demonstrates that whereas the reporting by large firms is fully aligned with IASB requirements, smaller firms' reports lack material information, thus undermining comparability of financial statements. The transition to IFRS 15 in Australia has generated mixed results for the value relevance of financial reports. While many companies reported insignificant effects during the transition period, some of them faced considerable declines in earnings and/or retained earnings. For these firms specifically, the value relevance of earnings was generally lower before adoption in comparison to those companies that experienced no considerable effects. After the adoption, there is little evidence to indicate that the standard enhanced the overall relevance of earnings (Onie et al., 2023).

The adoption of IFRS 15 in China, where IFRS-convergent standards were implemented, appears to have enhanced reported revenue and earnings quality. Although Chen (2024) finds that Chinese companies overall experienced improved earnings quality following IFRS 15, with reduced earnings manipulation via accruals, there is evidence that some may have turned to real earnings management, manipulating transaction timing, to achieve targets under the new standards. An example from the Middle East comes from Dubai's property sector. Trabelsi (2018) analysed its early adoption of IFRS 15. Companies that adopted the standard ahead of others revised how they recognised revenue. This shift also affected how useful

their financial statements were for interpreting company performance. Salameh et al. (2022) examined Jordan's construction and telecommunications industries and found that adopting IFRS 15 led to clearer reporting and greater transparency. Difficulties with applying IFRS 15 remain in a number of jurisdictions. Overcoming them is likely to depend on guidance shaped to local conditions and on continued academic and professional inquiry.

African markets also demonstrate distinctive IFRS 15 adoption experiences. In Nigeria, IFRS 15 created challenges for major industries because of complexity in some contracts; interviews with Nigerian companies identified difficulties interpreting the standard's application guidance for particular transactions, although the standard was widely regarded as an improvement for consistency of financial reporting (Ogunode & Salawu, 2021). Coetsee et al. (2022) analysed how South African companies reported the adoption of IFRS 15 in their financial statements. IFRS 15 disclosures do not all look the same. Some organisations explain the effects in detail so that readers can see more clearly what has changed. In some reports, detail is lacking. This can suggest that not all organisations meet the disclosure rules fully, or that enforcement is uneven. The core ideas behind IFRS 15 are applied worldwide, but countries differ in how they put them into practice, how workable they find them, and how much they influence reported results. Local factors, such as the strength of financial reporting systems, the training available to preparers, and whether IFRS or another GAAP is used, shape how the standard works in practice (Aladwey & Diab, 2023; Lim et al., 2015).

5.3 Industry-Specific Impacts of IFRS 15

Construction Sector

The application of IFRS 15 in the construction sector has significantly impacted its operational processes, given the industry's dependence on long-term contracts and the fact that IFRS 15 replaces IAS 11. The core element of IFRS 15 requires construction businesses to ascertain whether revenue should be recognised progressively (based on the stage of completion) or at a specific point in time, using criteria that could be different from past approaches. Research shows that many construction firms changed their revenue recognition policies to conform to these newer requirements. For example, property developers often experienced an immediate boost to equity, as IFRS 15 allowed earlier revenue recognition, thus improving their apparent financial position (Napier & Stadler, 2020). In contrast, many construction businesses faced initial reductions in retained earnings because IFRS 15 sometimes forced them to delay revenue that had been previously recognised too soon under earlier standards, as illustrated by Lee & Choi (2024).

Some construction companies have found the disclosure demands in IFRS 15 hard to follow, especially because of how much detail the standard expects. Back in 2020,

Boujelben and Kobbi-Fakhfakh examined how companies handled required reporting and found big differences in their approaches. Even big players sometimes left out key points such as performance obligations, contract balances, or the judgments that shaped their revenue figures. That variety is not surprising. A single construction contract can bundle together several different jobs, add in bonuses or penalties, and change mid-stream, all of which have to be recorded with care under IFRS 15.

Salameh and colleagues (2022) examined the rule's rollout in Jordan and found it did sharpen financial reporting. Revenue was presented more clearly, and results could be compared more easily between firms. And the smaller players? They had a harder time staying in step. One example comes from a case study by Barua and Gujarathi (2022) on Prestige Projects Ltd., an infrastructure company. Managers at the firm had trouble figuring out which promises in their contracts counted as separate obligations. They also met push-back inside the company when they tried to update systems or train staff on the new requirements.

Telecommunications Sector

Telecom companies often work with complicated customer contracts. These can include handset sales combined with long-term service plans. When IFRS 15 came in, it changed the rules. Providers now have to split these deals into separate performance obligations, such as the phone, the service, and any extras, and then spread the revenue according to the standalone price of each part. The timing of revenue recognition changed for many deals. Rather than allocating the handset's value evenly across the contract term, companies can now record part of it upfront.

Many telecom providers ended up reworking their accounting systems just to keep up, according to recent studies. Henry et al. (2019), in their "Pirate Wireless" case, showed just how tricky it could be. Decisions about how to bundle or amend contracts could move the reported numbers in a noticeable way. Revenue may rise quickly with the sale of the handset, but the service side can weaken over time. That pattern can influence short-term metrics, including ARPU

During the pandemic, Yassin et al. (2022) studied Orange (Jordan Telecom) in Jordan. According to their findings, the company tweaked its revenue recognition to influence reported earnings. This illustrated how IFRS 15 allows room for judgment, but also how that room can be risky. At the same time, the rules have pushed the industry toward greater consistency in how contracts are recorded. Boujelben and Kobbi-Fakhfakh (2020) found broad agreement among operators on how to handle common contract types, which helped investors compare results. However, not every provider is meeting all the disclosure requirements, such as clearly explaining how they split the transaction price.

Other Sectors (e.g., Healthcare, Banking)

Outside the high-impact industries already discussed, IFRS 15 has also shaped areas like healthcare, hospitality, banking, and transport. In healthcare, providers with government contracts had to adjust to new rules for recognising revenue from bundled services, insurance payments, and other variable elements. The UK's NHS Foundation Trusts have had to adapt to IFRS 15, and Tenzer (2024) looked at how they did it and what that meant for tracking performance. It also explored what the change meant for measuring performance. The work looked at its impact on how performance is measured. According to the study, the overall financial impact was limited, IFRS 15 brought notable changes to how Trusts measure, report, and manage their results. There was a clear, measurable change in total operating income. It came from moving revenue to different periods and from altering contracts. While income from core patient care stayed fairly stable, the standard required Trusts to identify and break down performance obligations in more detail, which in turn affected budgeting and control systems. Many Trusts reshaped their internal reporting and performance indicators to fit the new framework.

In banking and financial services, IFRS 15 mostly affects fee and commission income. Interest income is covered by other rules. Credit card reward schemes can be a headache under IFRS 15. Back in 2023, Brink and Steenkamp looked into the issue. They realised it's not easy to figure out what the points are worth, or when people are likely to use them. In their 2023 work, Brink and Steenkamp showed that assigning a value to the points, as well as predicting redemption, can be a complex task. How do you put a value on reward points, and when will customers use them? Credit card schemes under IFRS 15 raise both questions. Figuring out how to handle credit card reward points under IFRS 15 has been a puzzle for banks. Brink and Steenkamp explored it in 2023. They learned that some institutions simply make rough estimates so the process does not drag on. Others take a different route. The way it is done can change from one bank to the next. In later interviews, managers and technical staff sometimes gave opposite answers on the "right" method. Later interviews suggested that managers and technical staff often disagreed on the right way to record the rewards. According to Brink et al. (2024), this divide highlights a broader gap between the standard's theoretical goals and the way it is put into practice in day-to-day banking.

The hospitality and tourism sector felt the impact of IFRS 15 too. Hameed et al. (2019) examined hotels in Iraq and established that the implementation of IFRS 15 enhanced earnings quality in the sector. Prior to this, some hospitality firms could recognise revenue at the point of booking or reservation, but IFRS 15 made it clear that revenue should be recognised when the guest effectively receives the service (i.e., occupies the hotel or utilises the facilities). This resulted in a change that put an end to some aggressive revenue practices and resulted in more conservative

earnings reporting, which in Hameed et al.'s (2019) study was linked to greater quality of earnings (reduced volatility and lower likelihood of restatement).

The transport industry, generally, comprising airlines and shipping, has faced their industry-specific challenges due to IFRS 15. Likewise, in the shipping industry, Belesis et al. (2021) provided a fictional example that demonstrated the combined impact of IFRS 15 and IFRS 16 on the financial reports of a shipping firm. The findings of their study exhibited significant effects on reported revenue, liabilities, and EBITDA, highlighting the way that long-term contracts and capital-intensive activities amplify the effects of new accounting standards in transportation-related industries.

6 Methodologies and Research Gaps

Much of the work on IFRS 15 relies on financial datasets analysed with regression techniques. A common approach is to run difference-in-differences or panel models, contrasting data from before and after the standard's introduction and, in some cases, comparing IFRS firms with those following other rules. Lee and Choi (2024) analysed Korean firms from 2015 to 2020, using private companies as a control group in a difference-in-differences model. They reported that revenue figures for listed firms became more comparable once IFRS 15 came in. Using a difference-in-differences method, Chen (2024) analysed data from Chinese listed companies. The adoption of IFRS 15 appeared to lift accrual quality, yet it also coincided with greater use of real earnings management. This mix points to a trade-off between the reliability of reported figures and managerial behaviour. At the same time, firms engaged in more real earnings management, suggesting a behavioural trade-off. In Australia, Onie et al. (2023) found little change in the value relevance of earnings for most listed companies. Firms that suffered large revenue declines, however, saw comparability fall even before the new rules took effect.

Other regression studies include Kabir and Su (2022) (Australia/New Zealand firms' revenue recognition), Soodsook et al. (2024) (Thai firms' earnings quality), Aladwey and Diab (2023) (Egyptian firms' adoption determinants), and Quagli et al. (2021) (European firms' pre-adoption readiness). Overall, the quantitative evidence tends to show only limited average effects of IFRS 15 on earnings or comparability. Even so, results differ markedly between firms. For instance, Yassin et al. (2022) survey accountants in Jordan (IFRS) and the US (GAAP) and find that both groups used the revenue standard as an earnings-management tool during COVID-19, with IFRS preparers behaving more conservatively on existing contracts. Regression-based work makes up much of the IFRS 15 literature, spanning a wide range of countries and drawing mainly on broad industry datasets, such as those from Korea, China, Australia, and South Africa.

A second strand of research comprises single-firm or multi-firm case studies, often in specialised industries. A number of papers draw on detailed case examples to show how IFRS 15 works in real settings. Henry, Mest, and Safar (2019) developed a classroom case centred on a telecom operator known as “Pirate Wireless.” In another example, McNellis et al. (2020) examined a manufacturing company in the United States. Industry case reports cover diverse sectors: In their 2021 work, Belesis and colleagues examined how shipping companies applied IFRS 15 and 16. Barua and Gujarathi (2022) described how a construction company went through the transition to IFRS 15. Conrod and Cumby (2016) examined a revenue audit at an online gaming start-up. Both examples give a close, qualitative view of the standard in practice, and in some instances include straightforward before-and-after comparisons. The insights they offer are tied closely to the individual firms studied, so they cannot be generalised across the wider market. What they do show are recurring obstacles, like the bundled service deals often found in telecom or the complex, multi-part contracts typical in construction. As such, literature on digital or AI-driven revenue recognition remains nearly absent except for tangential studies (e.g. Brink et al. (2024) theorise IFRS treatment of credit-card reward programmes). In summary, case-based research offers rich stories (especially in telecom, construction, gaming, maritime, and manufacturing), but these methods are underused relative to archival studies.

Another major methodological category is content analysis of financial reports and disclosures. A number of studies take a systematic look at IFRS 15 disclosures across different firms and regions. Boujelben and Kobbi-Fakhfakh (2020), for instance, manually reviewed 2018 annual reports from EU telecom and construction companies. They found that many businesses fell short of full compliance, with disclosure quality varying by industry. In a broader South African review, Coetsee, Mohammadali-Haji, and van Wyk (2022) examined company reports and noted that most presented revenue information clearly, though key assumptions and interim-period data were often missing. (e.g. misaligned interim vs annual disclosures) that could impair decision usefulness. Other content studies include Ogunode and Salawu (2021) on Nigerian firms and Edeigba and Amenkhienan (2017) on New Zealand IFRS adoption. In the latter, the authors compare IFRS 15 (and others) under full IFRS vs NZIFRS and find little difference for large (Tier 1) firms, but larger disclosure concessions for small (Tier 2) entities. Overall, these disclosure analyses (often sector-focused on telecom/construction) demonstrate mixed compliance with IFRS 15 and rely on hand-collected qualitative data. They underline consistency benefits of IFRS 15 but also reveal weaknesses in practice (e.g. variation across industries). However, this approach has largely been used only in a few sectors and regions, with a noticeable gap in systematic studies of disclosure quality in, for example, technology, healthcare, or service industries.

A portion of IFRS 15 scholarship employs survey or interview methods to document perceptions and experiences. Grosu et al. (2022) surveyed firms in emerging economies on their readiness for adoption. Lim et al. (2015) collected responses from Malaysian auditors regarding anticipated effects. Hameed et al. (2019) investigated hotel managers' views in Iraq on the standard's impact on earnings quality. Salameh et al. (2022) studied construction firms in Jordan and found a positive link between adopting IFRS 15 and the quality of their financial reports. Much of the work in this area comes from Asia and the Middle East and offers insights tied to local conditions. These studies are usually limited to one country, use cross-sectional data, and rely on fairly simple statistical methods. Research using qualitative interviews is rare. Brink et al. (2024) carried out a Delphi study to gather expert opinions on issues in the financial services sector, with a focus on credit card reward programmes. In another project, Bierstaker et al. (2016) tested how U.S. financial professionals applied IFRS revenue recognition rules in a behavioural setting. Fewer than 40% gave answers in line with the standard, and many fell back on familiar GAAP treatments. The results suggest that, in practice, parts of the guidance remain hard to apply. Overall, there is relatively little survey or qualitative research on IFRS 15, and controlled experiments or behavioural fieldwork are rare. Where surveys have been carried out, they are mostly from Asia, Africa, and the Middle East. In contrast, the Americas and large parts of Europe have seen little coverage, apart from studies that review published documents. A few studies adopt conceptual or model-building methodologies. For example, Brink and Steenkamp (2024) develop a theoretical accounting model for credit card rewards programmes under IFRS, and Brink et al. (2023) propose an "IFRS decision heuristic" for complex revenue contracts. These papers use logical deduction to address niche IFRS 15 applications (in finance rather than core industries). Such theoretical works are novel but few. No experimental or simulation-based studies have been done to model managerial incentives under IFRS 15.

6.1 Research Gaps and Underexplored Areas

Despite the range of methods above, several approaches remain underexplored. Behavioral and perception studies are scarce: aside from Bierstaker et al. (2016) on managers' IFRS knowledge, no study tests how actual contract handlers or external users (investors, analysts) respond to IFRS 15 disclosures in experiments or choice experiments. Field experiments (e.g. varying how revenue information is presented to analysts) are virtually nonexistent. Longitudinal panel designs are limited: only a few studies (Lee & Choi 2024; Chen 2024) exploit multi-year pre/post data with diff-in-diff methods. Most work analyses a single transition year (2018/2019). Thus, the longer-term real effects of IFRS 15 (beyond initial implementation) remain unclear. Emerging topics like digital economy contracts (e.g. streaming, cloud

services) sales have not been empirically studied in the IFRS 15 context, despite their growing importance. Key research gaps include:

Long-Term Effects and Behavioral Changes: More multi-year, cross-country panel studies are needed to assess sustained effects. Most empirical studies on IFRS 15 to date capture the transition period or the first year of adoption. There is a paucity of longitudinal research on how IFRS 15's impacts evolve over multiple reporting periods. There is still uncertainty about how the standard will affect the quality of financial reporting and the behavior of earnings patterns over the long term. For example, does the initial uptick in disclosure quality persist, or do firms revert to boilerplate language in subsequent years? Has IFRS 15 led to sustained changes in how firms structure transactions or manage earnings over time (beyond the one-time transition adjustments)? Early analyses have primarily documented immediate adjustments – such as one-off changes to retained earnings on adoption and short-term earnings management responses. Also, how has IFRS 15 influenced business practices? Early evidence suggested some companies might redesign contracts to simplify accounting (Napier & Stadler, 2020). Investigating whether contract terms have evolved in response to accounting (a “real effect” of the standard) would be valuable. The longer-term consequences, such as whether revenue reporting becomes more predictable and consistent or whether firms develop new ways to take advantage of judgement-based areas, remain insufficiently examined.

User Perspectives and Decision Usefulness: Evidence on how IFRS 15 has influenced the decision-making of financial statement users, including investors, analysts and lenders, remains scarce. Although survey-based studies, such as EFRAG's user survey and other stakeholder reports, suggest that users value the enhanced disclosures and often perceive an improvement in their forecasting ability, academic research has not yet established a direct link between IFRS 15 and outcomes such as analyst forecast accuracy, the pricing of earnings by investors, or levels of information asymmetry. Understanding how users of financial statements interpret and react to IFRS 15-related disclosures is underdeveloped. While Aladwan (2019) offered insights into market reactions, broader research is needed into how investors, analysts, and creditors process the new revenue figures. Key research gaps include behavioral studies that assess how well investors understand complex revenue disclosures, experimental work examining how analysts make decisions under the revised revenue models, and surveys or interviews that explore the level of user trust in financial statements prepared under IFRS 15.

Disclosure Quality, Effects and Compliance over Time: Although several studies examined first-year IFRS 15 disclosures, questions remain regarding compliance consistency and quality in subsequent years. At the outset, certain firms provided detailed transition disclosures in response to regulatory requirements and significant

organisational changes. Whether this degree of transparency has been maintained over time, however, is still unclear. There is room for further content analysis research to assess disclosure evolution: Are companies providing more disaggregated revenue information and insightful narrative now than under prior standards? Are there areas of non-compliance or boilerplate wording emerging as the standard becomes “routine”? Additionally, comparing disclosure practices across jurisdictions could be valuable, since enforcement and guidance (or lack thereof) might lead to divergent interpretations of IFRS 15’s requirements. Future research could develop disclosure indices for IFRS 15 and correlate them with market outcomes or with qualitative characteristics like governance. Do companies with better corporate governance provide more transparent IFRS 15 disclosures? Does better disclosure correlate with lower information asymmetry or cost of capital? Early studies, such as those by Coetsee et al. (2022) and Karim and Riya (2022), provide useful evidence, but further in-depth research is needed to help shape the development of disclosure practices.

Sector-Specific Nuances: Some industries warrant deeper dives. For example, the technology sector (software, SaaS) and the media industry (licensing, subscriptions) have unique revenue models that IFRS 15 addresses, but academic research has only begun to scratch the surface in these areas. In-depth studies of specific industries would determine if IFRS 15 is successfully capturing the financial realities of digital goods and services, or if there are still transactions that continue to cause challenges.

Cross-Country Comparative Studies: Despite evidence from individual countries, comparative studies across jurisdictions remain sparse. Existing research (e.g., Yassin et al., 2022; Kabir & Su, 2022) illustrates contextual differences between IFRS and GAAP systems or among regions, but a comprehensive cross-country synthesis is lacking. Future studies should examine differences in implementation fidelity and disclosure compliance between developed vs. emerging markets (Karim & Riya, 2022; Grosu et al., 2022), institutional determinants of adoption outcomes (Quagli et al., 2021).

7 Conclusion

IFRS 15 was a milestone development in financial reporting that shifted global practice to a harmonised and consistent framework of revenue recognition. Comparative studies across countries indicate that, although IFRS 15 established a unified framework, its implementation and outcomes were shaped by local conditions. Market performance, the strength of regulatory oversight, and organisational readiness all played a part in this process. In many developed economies, the transition occurred with relatively few obstacles and yielded gains in financial statement comparability.

However, many emerging economies faced significant challenges in both complying with and interpreting the standard. Industry assessments suggest that IFRS 15 has had a significant impact on industries with complex revenue models, including construction, telecommunications, and service industries. In these specific industries, it led to significant changes in the timing of revenue recognition and the methods used for measurement. Other industries were affected relatively less; however, even in those cases, IFRS 15 worked to increase clarity and consistency, thus leading to better conceptual understanding and standardisation. Studies by Coetsee et al. (2022) and Quagli et al. (2021) provide evidence to the perception that IFRS 15 brought conceptual rigor, along with increased preparedness of companies for the standard, which worked to bring greater transparency and improvements in earnings quality (de Souza et al., 2022; Hameed et al., 2019). Moreover, Lee and Choi (2024) note that greater comparability and international alignment arguably mean that global accounting convergence has progressed.

IFRS 15 has overall improved the matching between revenue recognition and underlying economic activities, and therefore the quality of financial reporting. In many cases, earnings have become more conservative and are less prone to management manipulation, thereby giving investors and other stakeholders more reliable information. However, these gains have been achieved at the cost of increased complexity and reliance on managerial judgment, making strong disclosures and governance essential to ensure the objectives of the standard are fully met. Research literature suggests that the quality of disclosures has been mixed. Implementation success has shown variability. Variations in jurisdictional practices with respect to disclosure and compliance, especially among emerging markets (Karim & Riya, 2022; Grosu et al., 2022), suggest a critical need for stronger enforcement regimes and capacity-building initiatives.

Further, there is a lingering lack of adequate consensus among stakeholders with regard to awareness, especially between auditors and preparers. Research by Lim et al. (2015) found perceptual gaps in Malaysia, with preparers expressing concerns about the complexity of the standard and the related need for judgment.

The next finding relates to the interaction between IFRS 15 and earnings management practice. The advent of a more prescriptive standard was aimed at stifling discretionary accounting. An increasing number of studies point to a reduction in accrual-based earnings management (de Souza et al., 2022; Lee & Choi, 2024). However, this downward trend should not be taken as evidence that the practice has disappeared altogether. Managers in some cases simply changed the way they went about it. Instead of making adjustments in the accounts, they altered business operations, speeding up a shipment, delaying it, or offering last-minute discounts to customers to make sure the numbers landed where they wanted them (Chen, 2024). Instead of altering figures in the accounts, they adjusted business

operations bringing a delivery forward, postponing it, or offering customers an end-of-period discount to make sure revenue targets were reached (Chen, 2024). During periods of heightened pressure, such as the COVID-19 pandemic, evidence indicates that managers relied on the residual flexibility within IFRS 15. In practical application, managers may revise estimates of variable consideration, adjust contract provisions, or take other actions aimed at smoothing large swings in reported results (Yassin et al., 2022). Although IFRS 15 has, overall, improved the quality of financial reporting, it has not entirely removed the possibilities for earnings management. What has changed are the methods managers choose and the point in time they apply them. For both regulators and auditors, this is a detail that should not be overlooked, as maintaining the standard's aim of faithful representation will depend on steady and watchful oversight.

Looking ahead, the integration of extant research shows that while the first chapter of IFRS 15 implementation is complete, its story is ongoing. Interpretational and applicational variation continues, offering opportunities for standard setters to issue clarifying guidance and researchers to pursue long-term implications. Moreover, as business models evolve, e.g., the subscription economy or digital services, IFRS 15 will be continually tested by new revenue arrangements. Stakeholders need to be vigilant and collaborative. Auditors, regulators, and companies need to work together to implement the standard in good faith, and academics will have a central role to play in evaluating outcomes and informing improvements.

Overall, IFRS 15 has contributed to meaningful advances in revenue recognition, with the strongest gains seen in developed markets and in industries characterised by complex revenue models. Its impact, though, is far from universal and depends on the surrounding context. To fully understand its longer-term consequences, more research is needed particularly in sectors and regions that have so far been only sparsely examined.

Tab. 4 Literature Summary Table

Author	Year	Region/Country	Objective/Focus	Industry	Method
Lee W.J., Choi S.U.	2024	South Korea	Impact of IFRS 15 adoption on financial statement comparability	General	Empirical analysis
Yassin M.M., Shaban O.S., Al-Sraheen D.A.-D., Al Daoud K.A.	2022	International	Earnings management under IFRS 15 vs GAAP during COVID-19	General	Empirical analysis

Author	Year	Region/Country	Objective/Focus	Industry	Method
Soodsook D., Sangchan P., Sinlapates P., Meeprom S.	2024	Thailand	Effect of IFRS 15 adoption on earnings quality	General	Empirical analysis
Belesis N., Sorros J., Karagiorgos A., Kousounadis P.	2021	General	Effects of IFRS 15 and 16 on maritime company financials	Maritime	Case study
Aladwan M.	2019	Jordan	Impact of early IFRS 15 adoption on stock price and revenue	Financial/ Stock Market	Empirical analysis
Napier C.J., Stadler C.	2020	International	Effects of IFRS 15 on accounting and real outcomes	General	Empirical analysis
Boujelben S., Kobbi- Fakhfakh S.	2020	European Union	Compliance with IFRS 15 disclosure requirements	Telecommu- nications & Construction	Content analysis
Tenzer A.	2024	United Kingdom	IFRS 15 impact on NHS Trusts' performance	Healthcare	Empirical analysis
Grosu V. et al.	2022	Emerging economies	Implementation of IFRS 15 in emerging markets	General	Survey
Aladwey L., Diab A.	2023	Egypt	Determinants of early IFRS 15 adoption	General	Empirical analysis
Henry T.F. et al.	2019	General	Revenue recognition under IFRS 15 in telecom	Telecommu- nications	Case study
Kabir H., Su L.	2022	Australia & New Zealand	Effect of IFRS 15 on revenue recognition practices	General	Empirical analysis
Trabelsi N.S.	2018	UAE	Early adoption of IFRS 15 & accounting info	Real Estate	Empirical analysis

Author	Year	Region/Country	Objective/Focus	Industry	Method
Lim Y. et al.	2015	Malaysia	Auditors' perception of IFRS 15	General	Survey
Hameed A.M. et al.	2019	Iraq	IFRS 15 and earnings quality in hospitality	Hospitality	Survey
Barua S.K., Gujarathi M.R.	2022	India	IFRS 15 transition challenges	Construction	Case Study
Coetsee D. et al.	2022	South Africa	Decision usefulness of IFRS 15 disclosures	General	Content analysis
Chen J.	2024	China	IFRS 15 impact on revenue and earnings	General	Empirical analysis
Ogunode O.A., Salawu R.O.	2021	Nigeria	IFRS 15 revenue recognition dilemmas	General	Content analysis
Salameh R. et al.	2022	Jordan	IFRS 15 and financial report quality	Construction	Survey
Quagli A. et al.	2021	Europe	Pre-adoption IFRS 15 preparedness	General	Empirical analysis
Edeigba J., Amenkhienan F.	2017	New Zealand	IFRS adoption transparency & accountability	General	Content analysis
Brink S., Steenkamp G.	2024	International	Credit card rewards and IFRS 15	Financial	Theoretical model
de Souza P.V.S. et al.	2022	Brazil	IFRS 15 on accruals and earnings	General	Empirical analysis
Brink S.M., Steenkamp G.	2023	General	IFRS decision heuristic	Financial	Theoretical model
Brink S. et al.	2024	South Africa	IFRS 15 validation in credit cards	Financial	Qualitative empirical study
Karim M.R., Riya A.I.	2022	Bangladesh	IFRS 15 disclosure compliance	General	Empirical analysis

Author	Year	Region/Country	Objective/Focus	Industry	Method
Haddad M.F., Dammak S.	2023	Iraq	IFRS 15 impact on disclosure and investor decisions	General	Survey
Onie S., Ma L., Spiropoulos H., Wells P.	2023	International	Evaluation of the impacts of IFRS 15 adoption	General	Empirical analysis
Bierstaker J.L., Kopp L.S., Lombardi D.R.	2016	United States	Readiness of financial professionals for IFRS	Professional services	Survey
McNellis C.J., Barone G.J., Herbold J.	2020	United States	Case study on revenue recognition research and identification	Manufacturing	Case Study
Conrod J.D., Cumby J.	2016	United States	Revenue reporting and audit in online gaming	Online gaming	Case Study

Source: Author.

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Is the merger worth it?

Evaluating the effect of mergers of companies on their financial indicators via latent growth curve model (Pilot study)

*Petr Valouch – Maria Králová – Patrik Buci **

Abstract:

Our paper represents a pilot analysis and contribution to the understanding of the successful implementation of mergers in the geographic context of Central Europe and offers a foundation for future research. The analysis is based on a robust and unique dataset of 783 companies that merged in the Czech Republic over the past decade, representing a substantial proportion of merging companies in the region during the period under review. The study utilises financial statements from the merging companies, covering the period from the decisive merger day – that is, before any effects of the merger could materialise and the five years following it. Unlike traditional studies that predominantly rely on univariate methods, this research employs a comprehensive approach to analysing longitudinal, cross-industry post-merger data via latent growth curve models. This combination of dataset size and analytical depth has not been explored in this context before in the Central European region.

Klíčová slova: Effect; Mergers; Latent growth curve model; ROA.

JEL klasifikace: G34, O16.

1 Introduction

The issue of mergers has been the subject of interest in a number of expert studies. The key question that each study seeks to answer is whether mergers can improve the underlying economic performance of merging companies in the short, medium and long-term period, identify the causes of this improvement, or explain why mergers fail. Most studies, as our literature review shows, focus mainly on a sectoral view of mergers without a deeper analysis of the cross-sectoral effects of mergers. Quantitative analyses are then usually based on samples of a few dozen merged companies in economically developed markets or mainly in the Asian region. In

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terms of the impact of mergers in the Central European region, a deeper analysis is completely lacking or based only on partial case studies that do not allow generalising the conclusions reached. Similarly, the question of whether the merger will affect the economic results and production capacity of companies that show positive economic results before the merger in the same way compared to those companies that, on the contrary, are in economic problems in the period before the merger, has not been investigated yet.

This paper seeks to fill this gap using Latent Growth Curve Model (LGCM) of ROA looking for an answer to the question of whether, thanks to the merger, the companies achieve better economic results than before the merger. If it can be demonstrated that a merger contributes to improving the economic performance of the companies involved, it becomes a relevant factor for managers to consider in order to maintain the competitiveness of the firms they lead. On the contrary, if the results indicate a deterioration in the economic situation of the merged companies, managers should choose other tools to strengthen the development of their companies. In addition, answering the above questions could help business managers determine the optimal timing of the merger process, enabling them to maximise potential benefits while avoiding possible pitfalls associated with mergers.

Based on the information from numerous studies of post-acquisition performance, ROA is found to be the most applied accounting measure of the companies' post-merger performance (King et al., 2004). The ROA indicator represents a primary economic indicator showing the company's ability to appreciate the assets entrusted to it. It is thus an ideal indicator for analysing the production capacity of companies in comparison to the state before and after the merger. It is applicable across industries and firms of different sizes, making it a universal metric. This is especially useful because different industries have varying levels of asset intensity. Comparing ROA across industries helps normalise the analysis. It is also one of the most watched indicators of the financial analysis of commercial entities, as it quickly shows inter-company comparisons within one country and, when excluding the effects of different taxes and interest rates on the profit of companies, it also allows a simple comparison of results across different countries. ROA also has been used extensively in prior research on mergers and acquisitions as a reliable profitability indicator (e.g., Alexandridis et al., 2017; Andrade et al., 2001). Its use in this study aligns with established methodologies, ensuring comparability with other studies in the field. ROA is also straightforward to calculate and interpret, ensuring that results are accessible to both academics and practitioners. While more complex metrics (e.g., EVA, Tobin's Q) could offer additional insights, they also introduce challenges related to data availability, assumptions, and interpretability. ROA is consistently reported in financial statements, ensuring data availability and

reliability. Other performance indicators (e.g., sector-specific KPIs) may not be uniformly available or comparable across all firms, especially in cross-industry studies like this one.

In our study, sector-specific data and detailed information about other financial indicators were unavailable. ROA served as a proxy to capture general trends, as it is less influenced by sectoral accounting differences compared to ratios like gross profit margin or net profit margin. While using only ROA may not capture every dimension of merger success, it provides foundational insights into post-merger profitability trends. This study serves as a baseline, and future research can build on these findings by integrating additional metrics or industry-specific measures.

It is also important to investigate whether there is a significant difference in the economic impact of mergers between companies that exhibited economic distress measured by a negative ROA before the merger and companies that had a positive ROA before the merger.

This paper aims to contribute to the discussion on the effectiveness of mergers by examining whether companies achieve improved economic performance in the post-merger period. Thus, our analysis serves as a pilot study, utilising latent growth modelling to gain a better understanding of performance trends following mergers.

Given the practical and theoretical importance of M&A (and a great deal of literature on the topic), it is surprising that there has not been much empirical attention concerning the analysis of longitudinal data of accounting-based measures in time after the merger. Most of the studies focus on evaluating mergers from some specific industry. That is in contrast to the cross-industry aggregated data analysed in our paper which we consider to be innovative in M&A investigation. Nevertheless, some overview of how the topic of M&A performance is studied in other financial papers may be valuable for the reader and we provide original literature review of the research in this field.

As shown by a number of studies (Levy, Sarnat, 1999; Mueller, 2003; Motis, 2007; etc.), the main motive for mergers is usually an increase in the economic efficiency of the merging companies. This can be achieved by fulfilling other motives of mergers, which are mainly motives of operational synergies, financial synergies, economies of scale, increase in market power, diversification of risks, etc.

But some findings in corporate finance literature state that M&A tend to destroy value for acquirers rather than create. One of the most significant pieces of evidence was provided in the study from Andrade et al. (Andrade et al., 2001), where the authors concluded that the net wealth effect of takeover is negative for acquirers. But to demonstrate also some contradictory outcomes here, we use the study from Alexandridis (Alexandridis et al., 2017), which differentiate from other studies by focusing on acquisition investments post-2009s, to shed light on how things change for M&A after the 2008 financial crisis.

The paper from Trujillo et al. (Trujillo, 2019) explores the causal effect of M&A on the financial performance of companies from the U.S. generic drug industry between 1996 to 2017, using firm's financial and accounting data. The focus on causal effect here is already of additional value compared to other empirical studies on this topic, but the authors go even further and incorporate comparison with the performance of similar companies that did not merge on top of that. Results show that firms engaged in M&A experienced a decrease in operating profits of about 3.6 % in the year following the M&A and about 2.9 % decline up to 4 years after the takeover, despite the fact that these companies experienced higher profits in years prior to the deal closure.

Ibrahimi and Meghouar (Ibrahimi; Meghouar, 2019) were investigating a sample of 90 French companies involved in a merger or major acquisition between 2005 and 2014. The studied mergers and acquisitions were horizontal in nature and the goal of the case study was to identify a group of mergers that creates value and a group that destroys value and determine which accounting indicators are the primary sources of this Binary classification. The authors were using stepwise multiple linear regression to model the relationship between the variables.

Typical findings from early studies were suggesting that M&A did not increase acquiring firm value, assessed by either short-term (Jarrell et al., 1989) or long-term performance measures (Loderer et al., 1992). More precisely, acquisitions were often found to destroy acquiring firm value (Seth et al., 2002; Moeller et al., 2003) and produce highly volatile market returns (Pablo et al., 1996).

A large body of literature indicates that merger activities per se do not improve post-acquisition performance (Benitez et al., 2018; Badreldin et al., 2009). Other studies then show that a merger can only have a limited effect and even then only on a certain type of companies (Valouch; Králová, 2012).

The results of numerous empirical studies go even further, showing that well over half of mergers and acquisitions in the past century failed to create the expected value. In numerous cases, value was destroyed, and the company's performance after the deal closure dropped significantly below its pre-takeover level. (Eccles et al., 1999). Some more recent studies are even more specific, stating that "the failure rate of M&A is around 50 %" (Schoenberg, 2006) or even that "more than 61 % of the mergers and acquisitions are not successful" (Jindal, 2016). These results are consistent with a lot of other different works that have shown a decrease in profits following an M&A (for example Moeller et al., 2005; Bouwman et al., 2007; Betton et al., 2008).

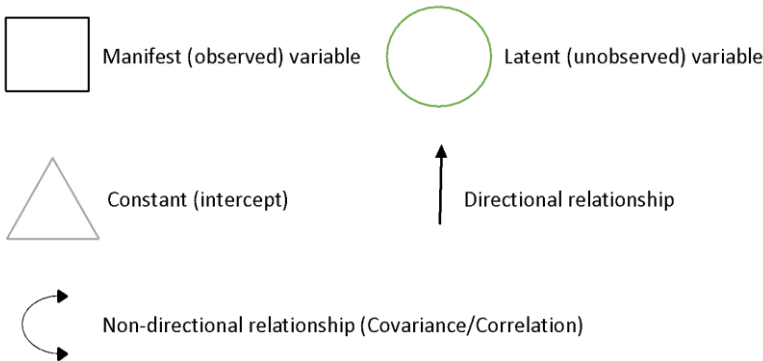
Our paper is based on (Búci, 2018; Búci, 2021), which it draws from and further develops some conclusions in more depth.

2 Methodology

This paper brings another perspective on the topic. In contrast to the mostly small, industry-specific data used in other papers, we analyse extensive longitudinal cross-industry aggregated data of post-merger accounting-based measures. To account for the complexity of longitudinal post-merger financial indicators development, affected by time-varying and time-invariant exploratory variables, we perform latent curve modelling rather than univariate analysis predominantly used in this area.

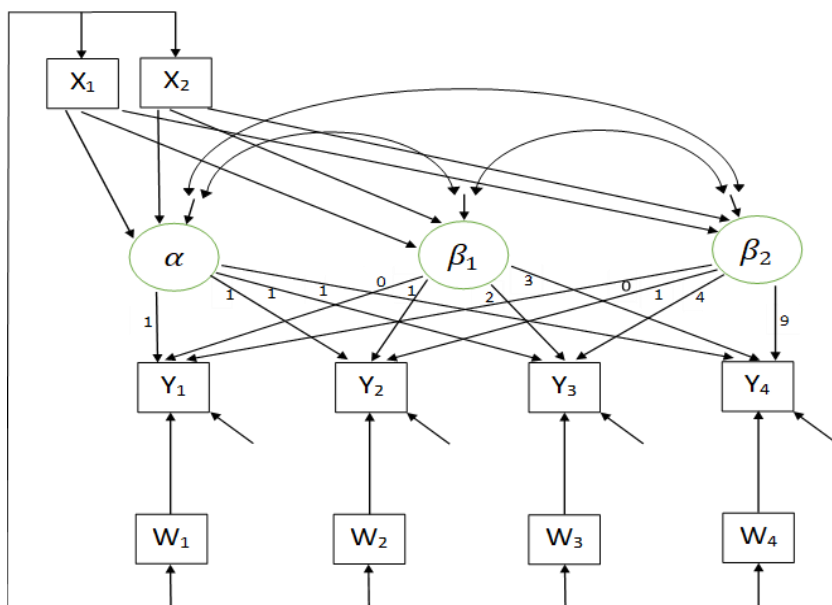
Latent growth models enable a more detailed analysis of indicator trajectories over time, representing a significant advantage over conventional univariate methods focused on year-on-year changes. Latent Growth Curve Models (LGCM) are based on Structural Equation Models (SEM) building blocks with latent variables. The LGCM approach allows each case in a sample to follow a unique trajectory of the variable of interest over time, as the intercept and slopes (treated as latent variables) are modelled as random effects. Figure 1 introduces the symbols used to visualise SEM diagrams, along with additional techniques derived from the SEM framework.

Fig. 1 Symbols used to create SEM diagrams.



Two underlying latent factors, random latent intercept, and random latent slope that form basic linear trajectory model of repeated measures of variable of interest Y , are represented by α and β . Both are exogenous variables which is expressed by being at the beginning of the single-headed arrow, while endogenous variables are being at the end of the single-headed arrow. (Analogously, an extended quadratic model with parameters α, β_1, β_2 is represented in Figure 2.)

Fig. 2 Quadratic latent curve model. Four repeated measures Y_1, \dots, Y_4 represent variable of interest; X_1 and X_2 represent time-invariant covariates; W_1, \dots, W_4 represent time-varying covariates, and α, β_1, β_2 represent random latent intercept, linear slope, and quadratic slope respectively.



The value for the covariance of latent intercept and slope, $\psi_{\alpha\beta}$, is visualised with double-headed arrows. The multiple indicators are the repeated measures of Y over all time points. The constant term represents the mean for the latent intercept, μ_{α} , and the mean for the latent slope, μ_{β} . The mean values of the trajectory parameter estimates are sometimes referred to as the fixed effects. The variances of both intercept and slope are random effects.

Endogenous variables always have an attached error term associated with them called a residual or disturbance. Error terms represent something unexplained by the model, meaning they have no direct cause within the model and, thus, are exogenous. While endogenous variables are not allowed to covary, their residuals are allowed to do so. Disturbances, ϵ , of the repeated measures Y at all time points are modelled as latent variables.

The estimated latent trajectory is the focus of LGCM analysis. It is not observed directly, but we infer its existence from the observed repeated measures across the time that are used to estimate this trajectory. They are related to the underlying latent factors through the factor loading matrix. These loadings are typically all fixed. For the latent intercept, the loadings are fixed at 1, indicating that the intercept factor

equally influences all repeated measures across the waves of data collection. For the latent slope, various time codings can be applied depending on the intervals between data collections and the nature of the hypothesised growth. Typically, the first value is fixed at 0, allowing the latent intercept to represent the mean value of the outcome variable at the first time point. The subsequent loadings then increase by one (i.e., 0, 1, 2, 3, etc.), reflecting equal intervals between data collection periods.

What LGCM does is that it explicitly models mean and covariance structures among the observed measures. Model-implied means of the repeated measures are entirely determined by means of latent factors, which are estimated. The other parameters that are estimated are the variance of the intercept and slope factors, the covariance between the initial point and rate of change, and the residual variance of the repeated measures, or in other words, variance not explained by the underlying growth process.

The quadratic unconditional model (without explanatory variables) for the i -th subject at time $t = 1, 2, \dots, T$ can be expressed as:

$$\begin{bmatrix} y_{i1} \\ y_{i2} \\ y_{i3} \\ \vdots \\ y_{iT} \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 \\ 1 & 1 & 1 \\ 1 & 2 & 4 \\ \vdots & \vdots & \vdots \\ 1 & T-1 & (T-1)^2 \end{bmatrix} \begin{bmatrix} \alpha_i \\ \beta_{1i} \\ \beta_{2i} \end{bmatrix} + \begin{bmatrix} \epsilon_{i1} \\ \epsilon_{i2} \\ \epsilon_{i3} \\ \vdots \\ \epsilon_{iT} \end{bmatrix},$$

where α, β_1, β_2 represent latent trajectory factors. The μ vector represents their factor means and the ζ vector represents their residuals:

$$\begin{bmatrix} \alpha_i \\ \beta_{1i} \\ \beta_{2i} \end{bmatrix} = \begin{bmatrix} \mu_\alpha \\ \mu_{\beta_1} \\ \mu_{\beta_2} \end{bmatrix} + \begin{bmatrix} \zeta_{\alpha i} \\ \zeta_{\beta_{1i}} \\ \zeta_{\beta_{2i}} \end{bmatrix}.$$

The covariance matrix of the equation errors, ζ , among the random intercept (α), linear (β_1) and quadratic (β_2) slope is denoted as follows:

$$\text{VAR}(\zeta) = \begin{bmatrix} \psi_{\alpha\alpha} & \psi_{\alpha\beta_1} & \psi_{\alpha\beta_2} \\ \psi_{\beta_1\alpha} & \psi_{\beta_1\beta_1} & \psi_{\beta_1\beta_2} \\ \psi_{\beta_2\alpha} & \psi_{\beta_2\beta_1} & \psi_{\beta_2\beta_2} \end{bmatrix}.$$

Models can be then extended by implementing time-invariant and time-varying covariates (conditional models). Much more on the methodology of SEM and LGCM can be found in (Schumacker et al., 2016) and in (Bollen, 2005).

3 Application of LGCM to Pre-Post-Merger ROA Data

In our study, LGCM is applied to model the development of companies' return on assets (ROA) across six time points: the year of the merger (time point 0) and five subsequent post-merger years (time points 1 to 5). ROA is treated as the observed outcome variable, measured repeatedly over this six-year period. Importantly, the first measurement reflects the financial performance of the companies at the moment of the merger — that is, before any effects of the merger could materialise. This enables a direct comparison of pre- and post-merger performance within the same model framework.

The latent growth trajectory is defined by three latent growth factors: the intercept, representing the expected ROA at the time of the merger (time 0); the linear slope, capturing the average annual rate of change; and the quadratic slope, reflecting possible curvature in the development over time. These factors are modelled as random variables to account for heterogeneity in individual trajectories. To define the shape of the latent trajectory, the model uses fixed factor loadings from each latent factor to the six repeated ROA measures: (1, 1, 1, 1, 1, 1) for the intercept; (0, 1, 2, 3, 4, 5) for the linear slope, and, (0, 1, 4, 9, 16, 25) for the quadratic slope. These loadings reflect equal time intervals and standard polynomial coding.

The model further includes residual error terms for each observed ROA measure and estimates the variances, means, and covariances of all latent factors. The resulting trajectory represents a model-implied development in ROA following the merger, grounded in pre-merger baseline values.

To explain variability in these trajectories, **time-invariant** covariates (*Size* and *ROA_Zero*) are used to predict the latent growth factors. *Size* is a binary variable indicating whether the company's assets exceeded €10 million at the time of the merger (*Size* = 1) or not (*Size* = 0), distinguishing small (0) versus big (1) companies. *ROA_Zero* is a binary indicator distinguishing companies with positive (*ROA_Zero* = 1, initial profit) versus negative (*ROA_Zero* = 0, initial loss) pre-merger return on assets in the year of the merger. It captures companies' initial profitability and allows the model to evaluate whether post-merger trajectories differ depending on pre-merger financial condition.

We included *Size* and *ROA_Zero* as covariates because both capture key aspects of pre-merger firm characteristics that may influence post-merger success. Company size plays an important role in merger implementation, as the process tends to be significantly more complex for large companies. While the merger of smaller companies is often straightforward, larger mergers involve intricate procedures and organisational challenges that may affect the outcome. Similarly, the company's pre-merger profitability — whether it starts from a positive or negative ROA — may shape its post-merger trajectory.

Additionally, the interest rate (R) of the Czech National Bank is included as a **time-varying** covariate, affecting ROA across all post-merger years. Its effect is constrained to be constant over time to allow for interpretation as an average influence.

This variable was incorporated not only due to its role in determining the cost of debt (particularly relevant in the Czech context, where companies are predominantly financed through bank or other types of loans), but also because it serves as a reliable macroeconomic indicator of the broader economic environment. This conditional LGCM structure enables us to explore both the average development in ROA and the extent to which company-level characteristics and macroeconomic context influence post-merger performance.

4 Data and Measures

The analysis is based on a large dataset of 792 merged companies, representing all 2,396 companies that successfully completed a merger transaction in the Czech Republic between 2001 and 2011. This data was collected from the financial statements of all the publicly available companies disclosed on the website of the Czech Trade register. Unfortunately, not all of the 2396 merged companies disclose this kind of data that we could use for our analysis. And even if the companies do that, there are a lot of statements (especially from older years) that are scanned in a very bad quality or scanned incorrectly which makes them unreadable and thus unprocessable. In addition, a lot of data is incomplete or the statements over the post-merger years are incoherent. Lastly, some merged companies were forced to cease their economic activity in the observed period after the merger. Thus, we could not further include data from such companies in the analysis. All of this resulted in a final dataset comprising 792 companies. Therefore, the results are derived from a subset of companies following the obligation to make their financial statements public and can be generalised to similar companies. Data is available on request. The distribution into the cohorts¹ is depicted in Table 1, where the x denotes the available accounting information in respective years for each cohort (where the first x for the cohort represents the year of the merger) and N is the number of companies in each cohort, divided in the number of small (the value of total assets less than €10 million) and large companies (more than €10 million).

¹ The cohort represents the number of companies that have undertaken the merger in the same year, conveying the fact that the observed performance after the merger was taking place in the same years.

Tab. 1 Distribution of the cohorts of the merging companies over the observed period. Total N=792 companies comprise of 358 small companies and 434 large companies.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	N	Small	Big
1.cohort	x	x	x	x	x	x	.	.	.	.	.	.	.	.	.	.	28	15	13
2.cohort	.	x	x	x	x	x	x	.	.	.	.	.	.	.	.	.	35	23	12
3.cohort	.	.	x	x	x	x	x	x	.	.	.	.	.	.	.	.	38	22	16
4.cohort	.	.	.	x	x	x	x	x	x	.	.	.	.	.	.	.	38	17	21
5.cohort	x	x	x	x	x	x	.	.	.	.	.	.	12	8	4
6.cohort	x	x	x	x	x	x	.	.	.	.	.	68	22	46
7.cohort	x	x	x	x	x	x	.	.	.	.	63	26	37
8.cohort	x	x	x	x	x	x	.	.	.	12	7	5
9.cohort	x	x	x	x	x	x	.	.	183	80	103
10.cohort	x	x	x	x	x	x	.	191	79	112
11.cohort	x	x	x	x	x	x	124	59	65

To evaluate the effect of mergers, we analyse company performance over a five-year period following the merger. As the key performance indicator, we use return on assets (ROA), measured annually in the year of the merger and in each of the five subsequent post-merger years. The ROA in the year of the merger (time point 0) reflects the sum of the ROA values of the two merging companies while they were still operating as separate entities. From the first post-merger year onward, ROA values are derived from the financial statements of the newly merged company.

ROA is a standard profitability ratio and has been widely used in post-acquisition research as a primary accounting-based measure of performance (King et al., 2004). The formula for ROA used in this study is as follows:

$$ROA = \frac{EBIT}{Total\ Assets}$$

reflecting the ability of the company to generate profitable sales from its primary business operations. Generally, ROA values over 5% are considered good, and values over 20% exceptional. However, we consider the observations with ROA values that exceeded the 0.1% quantile on each tail of the distribution in any observed year to be outliers that might skew the estimated general trajectory. There were only nine such companies. After removing them from a dataset, the final dataset comprised 783 companies. Table 2 shows the basic statistics of these companies. The number after the ROA column name indicates the year after the merger occurred.

Tab. 2 Means, Standard Deviations, and Correlations of repeated measures of ROA for 783 companies

	ROA	ROA1	ROA2	ROA3	ROA4	ROA5
ROA	1.0000					
ROA1	0.4830	1.0000				
ROA2	0.3614	0.4896	1.0000			
ROA3	0.3316	0.3465	0.5414	1.0000		
ROA4	0.3670	0.3735	0.5009	0.5554	1.0000	
ROA5	0.2862	0.2947	0.3566	0.3327	0.6462	1.0000
Mean	0.0525	0.0512	0.0494	0.0455	0.0513	0.0605
SD	0.1171	0.1380	0.1148	0.1307	0.1099	0.1309

Although the mean values of ROA over the whole sample indicate a convex quadratic trend, the trajectory can be very different if we split companies into two groups based on initial ROA values. The first group includes companies generating profits before the merger (582 companies), and the second group comprises those reporting losses (201 companies). Table 3 shows the means and standard deviations of ROA for these two groups.

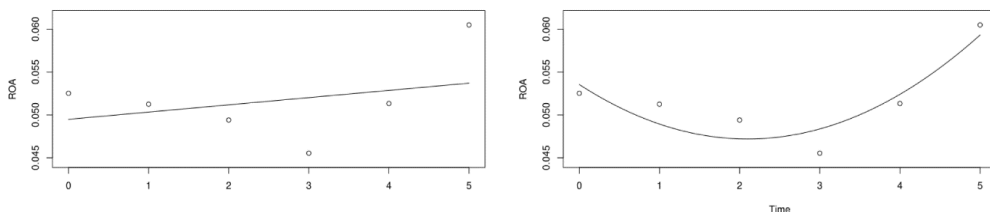
Tab. 3 Means and Standard Deviations of repeated measures of ROA for companies with initial values below and above zero.

	ROA	ROA1	ROA2	ROA3	ROA4	ROA5
Mean init loss	-0.0583	-0.0278	0.0001	-0.0040	0.0007	0.0137
SD init loss	0.0834	0.1677	0.1202	0.1396	0.1116	0.1161
Mean init profit	0.0908	0.0786	0.0664	0.0627	0.0688	0.0766
SD init profit	0.1016	0.1143	0.1078	0.1231	0.1039	0.1320

5 Results

Descriptive statistics in the previous section suggest that the mean values of ROA over time follow a quadratic rather than linear post-merger trajectory. However, testing that assumption and fitting the individual trajectories is necessary before any further modelling. Thus, we perform first the fit indices for unconditional (without any explanatory variables) latent growth curve models, where ROA over time is modelled via both linear and quadratic trend. The models' fit indices for linear [$p(\chi^2) = 0.0000$, TLI = 0.9241, 90 % CI for RMSEA = (0.0852, 0.1154)] and quadratic [$p(\chi^2) = 0.0000$, TLI = 0.9634, 90 % CI for RMSEA = (0.0520, 0.0880)] trajectories suggest a bad fit for both unconditional models as χ^2 p-value is significant for both. However, the TLI and RMSEA of the quadratic trajectory indicate moderate to great fit. The visualization of both fitted curves of observed ROA means over time, in addition to Table 2, is presented in Figure 3.

Fig. 3 Comparison of fitted linear and quadratic curve to observed means of ROA over time.



As the quadratic trajectory fits the data better, the quadratic unconditional model will be improved further.

To develop the conditional model, we incorporate both time-invariant and time-varying covariates into the model. The final quadratic model includes the binary time-invariant covariates *Size* and *ROA_Zero*, as well as the time-varying covariate *Interest Rate*. These variables, along with their coding and rationale for inclusion, are described in detail in Chapter 3.

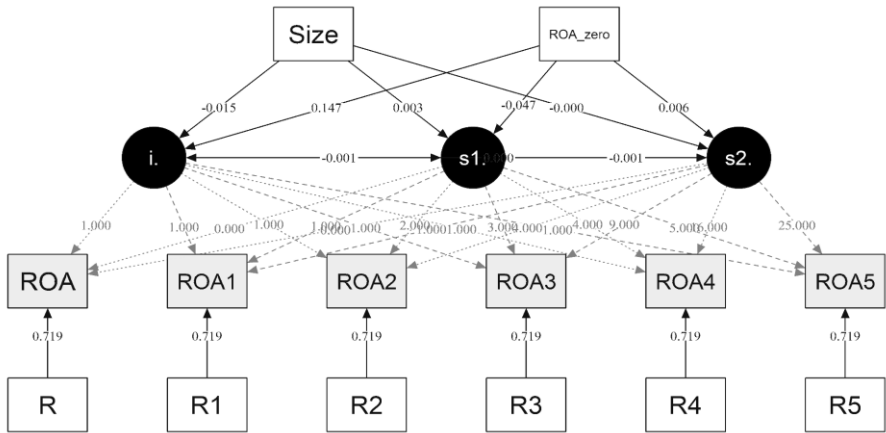
A graphical representation of the model, including the covariates *Size*, *ROA_Zero*, and *Interest Rate* (*R*), is shown in Figure 4 as a path diagram. The corresponding table (Table 4) presents model fit indices, parameter estimates, and regression coefficients. By including both time-invariant and time-varying covariates in the quadratic model, the fit indices improved: the TLI increased to 0.9743, approaching the ideal value of 1, and the RMSEA decreased to 0.0310, remaining safely below the 0.05 threshold.

In the conditional model, estimates of the latent intercept and slopes must be interpreted in conjunction with the effects of the covariates. Meaning, e.g., the model implied mean value of intercept -4.02% represents the model implied mean value of ROA on the day of the merger for small companies that belong to the group of mergers with the reported loss (negative ROA) at the time of the merger.

The mean latent intercept $\mu_{\alpha} = -0.0402$ is statistically significant ($p = 0.0014$), which is not surprising given that the model includes the *ROA_Zero* covariate that explicitly separates companies based on their initial ROA values. Since the intercept represents the expected ROA at the time of the merger for the reference group (companies with negative initial ROA and small size), a negative and statistically significant estimate is consistent with the definition of this group.

Fig. 4 Path diagram of conditional LGCM for ROA

i. represents intercept μ_α , s1. represents linear slope μ_{β_1} , s2. quadratic slope μ_{β_2} ; R, R1, ..., R5 represent time-varying covariate Interest Rate regressed onto the repeated measures of ROA; binary Size and binary ROA zero represent time-invariant covariates. Solid arrows represent regression paths from time-invariant covariates to latent growth factors; the corresponding estimated coefficients are also reported in Table 4. Dashed arrows indicate fixed factor loadings used to define the latent growth trajectory (intercept: 1, 1, 1, 1, 1, 1; linear slope: 0, 1, 2, 3, 4, 5; quadratic slope: 0, 1, 4, 9, 16, 25).



Tab. 4 Parameter estimates, standard errors, and related p-values of the final conditional LGCM of ROA. Model fit indices: p-value (χ^2) = 0.0006, TLI = 0.9743, RMSEA = 0.0310; RMSEA 90 % CI = (0.0202, 0.0413)

Parameter	Estimate	s.e.	p-value
Means:			
μ_α	-0.0402	0.0125	0.0014
μ_{β_1}	0.0263	0.0106	0.0127
μ_{β_2}	-0.0032	0.0021	0.1269
Variances:			
$\psi_{\alpha\alpha}$	0.0054	0.0007	0.0000
$\psi_{\beta_1\beta_1}$	0.0030	0.0004	0.0000
$\psi_{\beta_2\beta_2}$	0.0001	0.0000	0.0000
Covariances:			
$\psi_{\alpha\beta_1}$	-0.0013	0.0005	0.0104
$\psi_{\alpha\beta_2}$	0.0002	0.0001	0.0666
$\psi_{\beta_1\beta_2}$	-0.0005	0.0001	0.0000
Covariates	α	β_1	β_2
	Estimate (s.e)	Estimate (s.e)	Estimate (s.e)
Size	-0.0146 (0.0069)	0.0027 (0.0059)	-0.0001 (0.0012)
ROA_Zero	0.1474 (0.0078)	-0.0470 (0.0067)	0.0063 (0.0013)
IR	0.7188 (0.2475) p-value=0.0037		

Therefore, to explain the differences in the post-merger development better, it is valuable to make use of covariate *ROA_Zero*, even though it makes the parameter estimate of the latent intercept in the model less interpretative.

And although only one of the slope factor parameters suggests a significant difference from zero (latent linear slope), intercept μ_α and linear slope μ_{β_1} estimates (−0,0402; −0,0032), and their respective p-values (0,0014; 0,0127) reflect the hypothesised post-merger development in ROA only for small companies reporting losses before the merger (reference group).

The estimated effects of company *Size* on both the linear μ_{β_1} and quadratic μ_{β_2} slopes are not statistically significant ($p = 0.6517$ and $p = 0.9177$, respectively). This indicates that the rate and shape of post-merger ROA development do not differ meaningfully between small and big companies. In other words, the company's size does not appear to influence how ROA evolves over time following the merger.

On the other hand, the group membership based on *ROA-zero* considerably affects both slope factors. The model implies that small companies (*Size*=0) starting at the time of the merger with negative ROA (*ROA_Zero*=0) report on average −4.02% returns on assets, but the ability to generate more profitable sales in these companies is affected positively by the merger. At least in the first years, when the ROA exhibit a rising trend, accounting for the fact that the $\hat{\mu}_{\beta_1} = 0,0263$ for linear slope is much greater than $\hat{\mu}_{\beta_2} = -0,0032$ for quadratic slope, which is then decelerated in the later years, eventually resulting in the reversed, decreasing trend as an effect of the negative quadratic factor. (However, the negative quadratic slope of −0.0032 is not statistically significant ($p = 0.1269$), which implies that although some deceleration in the growth trend may occur over time, this effect is weak. This issue will be addressed more specifically in the multiple-group model presented later.)

For companies with initially positive ROA at the time of the merger (*ROA_Zero* = 1), the model suggests a contrasting development pattern. The estimated average initial ROA for small companies (*Size*=0) in this group is 10.72%, calculated as the sum of the latent intercept and the *ROA_Zero* effect (−0.0402 + 0.1474 = 0.1072). For large companies (*Size* = 1), this value is further reduced by 1.46 percentage points due to the negative size effect, resulting in an initial ROA of 9.26 %.

These companies – starting from a profitable position (*ROA_Zero* = 1) – exhibit an initially declining ROA trajectory following the merger. (The estimated linear slope for small companies with initial positive ROA is −0.0207, computed as $0.0263 - 0.0470$; for big companies it is −0.0180, computed as $-0.0207 + 0.0027$.) However, the downward trend appears to decelerate over time and may eventually reverse (the quadratic slope is for small companies estimated at 0.0031 computed as $-0.0032 + 0.0063$; for big companies it is 0.0030, computed as $0.0031 - 0.0001$).

The term “may” is crucial here: while the linear slope estimate is negative, the positive quadratic slope is not statistically significant. Thus, although the model permits the possibility of long-term recovery, the statistical evidence supporting such a trajectory remains limited².

Interest Rate effect on ROA was proved to be significant and its positive value (estimate = 0.7188, $p = 0.0037$) suggests that the companies are generating higher returns on assets in years with a higher interest rate in the economy. This is a surprising finding for us, so that we need to make it clear that this is only a correlation finding, and probably not a causal relationship. We raise a hypothesis that might shed more light on why this correlation comes out surprisingly, namely that periods of rising interest rates usually mean that economies are in a growth phase of the cycle, which usually also means that corporate sales are rising. Monetary policy usually responds to the business cycle with a lag, so the rate of growth in sales could be outpacing the rate of growth in interest rates, which could explain the correlation found. However, after a period of time, rising interest rates should, among other things, contribute to a slowdown in revenue growth, which would mean that rising interest rates would start to contribute to a decline in ROA, in line with expectations. Obviously, this hypothesis should be further tested to confirm or refuse it.

In the pair of exogenous variables – *Size* and *ROA_Zero* – only *ROA_Zero* proved to have a significant effect on trajectories. Thus, instead of treating *ROA_Zero* as a time-invariant covariate in a single-group conditional model, we implemented a multiple-group LGCM based on *ROA_Zero* group membership. This enables the estimation of separate growth trajectories for companies with positive versus negative profitability at the time of the merger. Moreover, the multiple-group specification provides a more transparent framework for evaluating group-specific model parameters, as it enables formal testing of group-specific intercepts and slopes, including the reporting of their associated p-values, which were not available in the single-group model.

Table 5 presents the estimated trajectories for both groups defined by *ROA_Zero*, along with the corresponding model fit indices

² While the latent means and regression effects are each associated with their own significance tests, the derived estimates for non-reference groups (e.g., *ROA_Zero* = 1 or *Size* = 1) result from linear combinations of parameters and are not accompanied by model-estimated standard errors or p-values. A more differentiated view of the trajectories — including separate parameter estimates and associated significance levels — is provided in the subsequent multiple-group model.

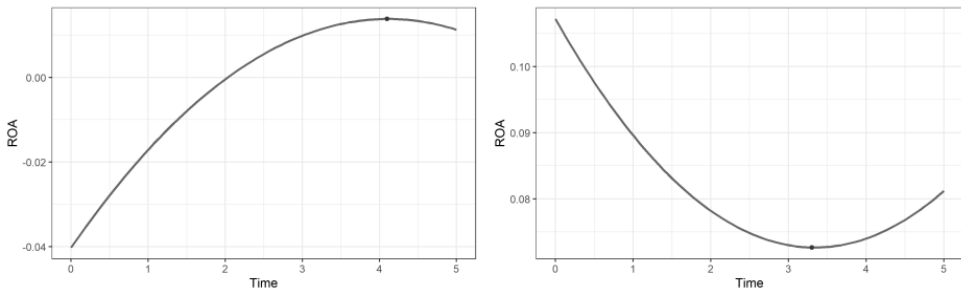
Tab. 5 Parameter estimates, standard errors, and related p-values of multiple-group *LGCM of ROA* (*ROA_zero* as a group). Model fit indices: *Robust P-value* (χ^2) = 0.1118, *Robust TLI* = 0.9822, *Robust RMSEA* = 0.0240; *Robust RMSEA 90 % CI* = (0.0000, 0.0401).

Negative profitability before the merger				Positive profitability before the merger			
Parameter	Estimate	Std.Err	p-value	Parameter	Estimate	Std.Err	p-value
Means:				Means:			
μ_α	-0.0693	0.0062	0.0000	μ_α	0.0861	0.0045	0.0000
μ_{β_1}	0.0320	0.0064	0.0000	μ_{β_1}	-0.0168	0.0032	0.0000
μ_{β_2}	-0.0034	0.0013	0.0066	μ_{β_2}	0.0029	0.0007	0.0000
Covariances:				Covariances:			
$\psi_{\alpha\beta_1}$	-0.0029	0.0027	0.2752	$\psi_{\alpha\beta_1}$	-0.0008	0.0008	0.2791
$\psi_{\alpha\beta_2}$	0.0004	0.0004	0.3517	$\psi_{\alpha\beta_2}$	0.0001	0.0002	0.4701
$\psi_{\beta_1\beta_2}$	-0.0009	0.0004	0.0204	$\psi_{\beta_1\beta_2}$	-0.0005	0.0002	0.0033
TVC:				TVC:			
IR	1.3209	0.0000	0.0000	IR	0.5529	0.2534	0.0291

Based on the multiple-group model output in Table 5, the trajectories of post-merger ROA development differ clearly between companies that reported negative profitability at the time of the merger and those that started from a profitable position. All latent growth factors — the intercept, linear slope, and quadratic slope — are statistically significant in both groups.

For companies with **negative pre-merger ROA**, the model estimates an average return on assets of -6.93% at the time of the merger. In the first year following the merger, ROA increases by 2.86% , to -4.07% ($-0.0693 + 1 \cdot 0.0320 + 1 \cdot (-0.0034) = -0.0407$). In the second year, it increases by a further 2.18% to -1.89% (computed as $-0.0693 + 2 \cdot 0.0320 + 4 \cdot (-0.0034) = -0.0189$). For subsequent post-merger years, the trajectory evolves analogously based on the specified linear and quadratic effects — all of which are statistically significant. As illustrated in Figure 5 (left panel), this trajectory initially rises but later flattens and reverses due to the negative quadratic component.

Fig. 5 Model implied trajectory of ROA for companies with negative profitability before the merger on the left and positive profitability before the merger on the right.



For companies with **positive pre-merger ROA**, the model estimates an average return on assets of 8.61% at the time of the merger. In the first year, ROA declines

by 1.39% to 7.22% ($0.0861 + 1 \cdot (-0.0168) + 1 \cdot 0.0029 = 0.0722$). In the second year, it decreases by a further 0.81% to 6.41% ($0.0861 + 2 \cdot (-0.0168) + 4 \cdot 0.0029 = 0.0641$). The lowest value is reached in the third year (6.18%), after which ROA starts to rise again — reaching 7.46% in year five. As shown in Figure 5 (right panel), the trajectory initially declines but gradually recovers, driven by the positive (statistically significant) quadratic trend.

The multiple-group model highlights that the initial profitability condition – as captured by ROA_Zero – plays a fundamental role in shaping the post-merger ROA trajectory. The two groups exhibit markedly distinct patterns of development: while companies with pre-merger losses display an initial recovery followed by deceleration, those with pre-merger profits undergo an initial decline that later reverses. This underscores the importance of financial starting position in merger outcomes. Although the year of the merger (time point 0) serves as a valid baseline for assessing post-merger effects, the interpretation is constrained by the absence of sector-level data and by the lack of historical financial information for the merging entities prior to the merger, as these companies did not yet exist in their final, post-merger form. Future research should address this limitation by incorporating industry classifications and, where feasible, the financial histories of the pre-merger components.

6 Discussion

Our research has produced some unexpected findings, particularly the observation that companies with weaker pre-merger financial performance (as measured by ROA) tend to show short-term improvements following a merger, whereas companies with stronger pre-merger performance often experience a decline. While these patterns are noteworthy, they should be interpreted with caution due to several limitations of our study.

Profit-generating companies may pursue mergers primarily for expansion or strategic positioning, rather than as a necessity. However, these types of mergers can bring integration costs, cultural mismatches, or management friction that temporarily reduce efficiency. The eventual recovery in ROA suggests that these companies gradually adapt and stabilise. Alternatively, firms entering the merger from a strong financial position may simply regress toward more typical levels of profitability over time. Their initial high ROA could reflect temporary factors or peak performance, and the post-merger period may simply capture a return to average levels, explaining the early decline in ROA.

However, it is important to note that these interpretations are speculative, as our analysis does not control for other variables that may influence post-merger performance.

Similarly, the observed short-term improvement in companies with negative pre-merger ROA may reflect the merger's role as a temporary catalyst, as loss-making firms often pursue mergers as a corrective measure - streamlining or eliminating inefficient processes and creating a sense of renewal. However, this effect appears to diminish over time, with performance often reverting to pre-merger levels or deteriorating further. Alternatively, managers of underperforming companies may be more motivated to justify the merger by demonstrating rapid post-merger gains. There may also be a stronger external expectation to initiate a turnaround in performance, driving early efficiency improvements. Still, the deeper structural issues may resurface in the longer term, leading to the observed deceleration in ROA growth. Again, without control variables or a broader set of performance indicators, it is not possible to determine whether these changes are directly attributable to the merger itself.

Moreover, our reliance on ROA as the sole measure of performance presents an additional limitation. While ROA is a commonly used indicator, it may not fully capture the complexity of post-merger integration outcomes, especially in the presence of intangible factors such as cultural fit, strategic alignment, or managerial effectiveness.

In light of these limitations, we refrain from making strong practical recommendations. Instead, we suggest that the relationship between merger outcomes and pre-merger financial performance warrants further investigation using more comprehensive datasets and methodologies that incorporate control variables and multiple performance metrics. Such research could help clarify whether the trends observed in our study are robust and generalisable, or whether they reflect context-specific dynamics or unobserved confounding factors.

7 Conclusion

Any merger or acquisition is a complicated transaction that requires quality ad-hoc financial analysis and due diligence. In addition, cultural and other important aspects such as geographical, sectoral, personal and similar considerations need to be taken into account. However, we believe that the research in this paper provides an interesting contribution to the topic of the merger effect.

Mergers and acquisitions are corporate decisions that affect individual business units differently. In addition, there are many related events outside the merger that can affect the post-merger economic impact. And based on our results, it should be acknowledged that the observed change in the observed variables is only to some extent due to the merger.

This study distinguishes itself by leveraging a unique dataset that captures up to six consecutive annual ROA measurements for each company in our dataset following

a merger. Such longitudinal financial data at the company level are rarely available in the context of post-merger research, particularly in Central and Eastern Europe. This temporal richness enabled the application of latent growth curve modelling (LGCM), a novel and still rarely applied approach in merger performance research. The use of LGCM allowed for a more refined analysis of post-merger ROA development, capturing both linear and non-linear trends and enabling comparisons between groups of companies with different pre-merger financial conditions.

Our findings suggest that mergers may lead to short-term improvements in financial performance for companies that were underperforming prior to the merger, as indicated by negative ROA values. However, this effect appears to be temporary, with performance often returning to pre-merger levels or deteriorating in the longer term.

In contrast, companies with positive ROA prior to the merger tend to experience a decline in profitability in the years immediately following the merger. Although there may be signs of gradual recovery in later years, the average ROA five years after the merger remains below its pre-merger level. These findings suggest that mergers may not be an effective strategy for improving long-term profitability in already successful firms, at least not without additional strategic or operational adjustments.

Although company size is often assumed to play a critical role in post-merger outcomes, our results suggest otherwise. In the conditional latent growth curve model, the effects of company size on both the linear and quadratic slopes of ROA were not statistically significant. This finding indicates that, at least in our sample, the post-merger development of profitability is not systematically different between small and large companies. This challenges common assumptions in merger analysis.

It is important to emphasise that these conclusions should be interpreted with caution. Our analysis is subject to several limitations, including the absence of some other control variables, the use of ROA as the sole performance metric, and the lack of information on sectoral affiliation or pre-merger performance trajectories. These factors may influence the observed outcomes and limit the generalisability of our results.

Moreover, the motivations behind mergers can vary significantly. While many transactions may be driven by the goal of improving profitability, others may pursue strategic, managerial, or ownership-related objectives. As such, a decline in ROA does not necessarily imply that a merger was unsuccessful from the perspective of the firms involved.

The inclusion of other meaningful variables, such as industry information or knowledge of individual merger motives, could further improve the modelling of latent ROA growth trajectories. While we can safely assume that many of the

mergers analysed were realized to improve profitability, we cannot fully expect this to be true for all mergers that occur in the Central European region. Some of the managers of the merged companies had other reasons for the transaction and may thus consider the merger successful despite the negative development of ROA after the merger. The presence of such companies in our dataset would then have a negative effect on the average of the trajectories implied by the model and thus a negative effect on the generalised results and implications.

Despite these limitations, our approach preserves the ability to observe changes in profitability by comparing the financial performance of merging companies at the time of the merger (unaffected by the merger) with the post-merger development of the merged entity. This allows for a meaningful, albeit cautious, interpretation of merger effects.

From a practical perspective, our findings may be of interest to business owners and managers considering mergers as a growth strategy. While we do not recommend relying on mergers as a guaranteed path to improved long-term profitability, particularly for already profitable firms, the short-term improvements observed in underperforming firms may offer opportunities (especially if followed by well-informed strategic decisions). For example, in cases where the sale of a company is planned, correctly timing the transaction within the post-merger period may allow firms to capitalise on temporary performance gains.

Ultimately, mergers and acquisitions are complex undertakings influenced by a wide range of financial, strategic, and organisational factors. We hope that this study contributes to a more nuanced understanding of their potential effects and encourages further research using more comprehensive data and robust methodological frameworks.

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Zemřel zakladatel polistopadových podnikových financí prof. Ing. Josef Valach, CSc.

Se smutkem v srdci se jen těžko smiřujeme se skutečností, že nás dne 13. října 2025 opustil v požehnaném věku 92 let náš bývalý dlouholetý kolega, pedagog, vedoucí katedry a kamarád pan prof. Ing. Josef Valach, CSc., který odešel tíše, a přesto po sobě zanechal stopu, již nepřekryje čas. Pro mnohé z nás byl víc než jen vynikající pedagog a uznávaný odborník. Byl oporou, inspirací a člověkem, který dokázal naslouchat. Setkání s ním v nás zanechala pocit, že vzdělání není jen soubor faktů, ale především cesta k porozumění světu i sobě samým.

Ve své práci spojoval náročnost s lidskostí. Uměl klást otázky, které mířily k podstatě, a vedl nás k tomu, abychom přemýšleli do hloubky, nebáli se samostatnosti a dokázali nést odpovědnost za vlastní závěry. Jeho přednášky nebyly pouhým přenosem informací, nýbrž byly pozváním k dialogu, ke zvědavosti a k pochopení širších souvislostí. Dokázal být přísný, a zároveň spravedlivý. Byl připraven ocenit píli, podpořit snahu a s trpělivostí sobě vlastní vysvětlit, co bylo ještě nejasné.

Narodil se 9. února 1933 v Bartovicích, které jsou nyní součástí Ostravy. Na Vysoké škole ekonomické v Praze začal působit již v padesátých letech jako odborný asistent. Profesorem pro obor finance byl jmenován v roce 1990. V roce 1991 se na nově založené Fakultě financí a účetnictví stal prvním vedoucím Katedry financí podniku, která byla v roce 2000 přejmenována na Katedru financí a oceňování podniku, a v této funkci působil až do roku 2001. Na katedře dále působil v pozici profesora až do svého odchodu na zasloužený odpočinek v roce 2014. Prof. Valach vystavěl moderní finanční řízení jako obor na bakalářské i magisterské úrovni. Byl vedoucím autorského kolektivu klíčové publikace katedry „Finanční řízení podniku“, která byla průběžně aktualizována a doplňována o další členy autorského kolektivu. V průběhu 90. let se výuka podnikových financí a finančního řízení podniku prakticky na všech vysokých školách ekonomického zaměření neobešla bez základní literatury, kterou byla právě tato zmíněná publikace. Výuka se na těchto školách opírala právě o koncepci postavenou prof. Valachem. Sám pan profesor se postupně začal specializovat na klíčovou část podnikových financí a finančního řízení podniku, a to na investiční rozhodování a dlouhodobé financování. Připravil a vyučoval dlouhá léta předmět se stejným názvem, který byl podpořen publikací „Investiční rozhodování a dlouhodobé financování“ opakovaně vydávanou v nakladatelství Ekopress, s.r.o. Předmět se vyučuje dodnes pod garancí jeho žáka a nástupce doc. JUDr. Ing. Milana Hrdého, Ph.D. et Ph.D. Investiční rozhodování a dlouhodobé financování podniku je unikátně postavený předmět, který není v této podobě vyučován ani na zahraničních univerzitách, kde se setkáváme s předměty jako „Advanced Corporate Finance“ nebo „Advanced Financial

Management“ či „Investments“, kde se však jedná především o investování na finančních trzích, nikoliv o investice podnikové.

Kromě činnosti pedagogické se pan profesor věnoval i činnosti vědecké. Za zmínku stojí např. úspěšně řešené projekty v rámci GAČR s názvem „Hodnocení efektivnosti investic a návrh koncepce jejich financování na podporu začleňování českého průmyslu do světové ekonomiky“ a „Strategie finančního řízení českých podniků při rozvíjení ekonomické dynamiky“. Pan profesor nikdy nepředstíral absolutní jistoty, naopak nás učil, že poctivá práce začíná přiznáním hranic vlastního poznání. Uměl propojovat teorii s konkrétní zkušeností a hledat cesty, jak přinést užitek nejen akademickému světu, ale i praxi. Mladší kolegy vedl s tichou důsledností a velkorysostí, která dávala vyniknout jejich vlastním talentům. Mnozí z nás si uchovávají živé obrazy, krátké rozhovory na chodbě, jež dokázaly změnit směr uvažování a pečlivě okomentované rukopisy, v nichž za každou poznámkou stálo upřímné přání posunout věc o krok dál. Jeho dveře byly otevřené, ať už šlo o odborný problém, nebo o lidské dilema. Nikdy nikomu nezavíral cestu, ale trpělivě ukazoval, co všechno obnáší odpovědná svoboda.

Zůstává v našich vzpomínkách jako člověk, který měl rád svou práci i lidi kolem sebe. Jeho klidná autorita nevyžadovala zvýšený hlas, opírala se o kompetenci, slušnost a osobní příklad. Laskavý humor, s nímž dokázal odlehčit i složité situace, byl vždy spojen s respektem k druhému. V těžších chvílích přinášel uklidňující jistotu, že smysl se rodí z trpělivosti, poctivosti a vytrvalosti.

Odchod prof. Josefa Valacha je ztrátou pro rodinu, kolegy, studenty i širší komunitu. Děkujeme za čas, který nám věnoval, za energii, kterou vložil do práce, jež přesahuje jedno období i jednu generaci, a za dobré slovo, které dokáže provázet celý život. Jeho odkaz nespočívá jen v publikovaných textech či projektech, ale především v lidech, které ovlivnil. Jsem rád, že mohu patřit mezi ně. Věřím, že to nejcennější, co nám předal, je měřítko kvality, k němuž se budeme vracet s důrazem na spravedlnost a poctivost.

Rodině vyjadřujeme upřímnou soustrast. Děkujeme, že jste mu byli zázemím, o něž se mohl opřít, a díky němuž mohl být oporou i pro nás. Vědomí, že jeho život měl hluboký smysl a mnoho dobrého přinesl, je útěchou v zármutku, který s Vámi dnes sdílíme.

Loučíme se s vděčností a úctou. Odpočívajte v pokoji, pane profesore. Čest Vaší památce.

Za kolegy, studenty a přátele.

Doc. JUDr. Ing. Milan HRDÝ, Ph.D. et Ph.D.*

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S úctou a vděčností vzpomínáme na profesora Jaroslava Daňhela

V neděli 23. listopadu 2025 nás poklidně a ve spánku ve věku 82 let navždy opustil náš kolega, učitel a přítel, profesor Jaroslav Daňhel. Odešel jemně. Bez honosných gest. Nicméně v tichu, které po něm zůstalo, zní jeho slova, která kdy vnesl do našich životů, neboť v sobě měl lehkost, která konejšila a hloubku, která formovala.

Narodil se 1. června 1943 v Kutné Hoře, ve městě, které si navždy uložil do svého srdce. I když ho život nakonec zavedl do Prahy, zejména ve svátečních obdobích se ke Kutné Hoře vracel v myšlenkách, vzpomínkách a fotografických pozdravech, jež posílal lidem ve svém okolí.

Poté, co absolvoval místní kutnohorské gymnázium, si zvolil jako svou alma mater Vysokou školu ekonomickou v Praze, kde vystudoval obor finance a ekonomicko-matematické výpočty. Ačkoliv po promoci nastoupil do České pojišťovny, kde se dokázal z pozice likvidátora vypracovat až do představenstva, byla to právě Vysoká škola ekonomická, konkrétně Katedra bankovníctví a pojišťovnictví na Fakultě financí a účetnictví, se kterou již naplno spojil od druhé poloviny devadesátých let nejvýznamnější část svého akademického působení.

Jeho zkušenosti z každodenní praxe, získané přímo mezi lidskými příběhy a konkrétními škodami, se ustavičně proplétaly s hlubokými teoretickými znalostmi, které si po celý život pečlivě budoval. S citem pro nahodilost a riziko dokázal vidět souvislosti a smysl tam, kde jiní viděli jen náhodu a chaos. Tato schopnost z něj vytvořila osobnost jedinečnou a nadčasovou, člověka, jehož vhled a moudrost nezůstávaly skryté, ale dodávaly inspiraci všem, kteří s ním pracovali a učili se od něj.

Byla to i četba Ericha Fromma, jehož myšlenky o svobodě, odpovědnosti a lásce k člověku hluboce formovaly jeho pohled na život i práci. Fromm mu ukázal, že skutečná síla spočívá v porozumění druhým a v odpovědném využití vlastních schopností, a že lidskost je hodnotou, kterou nelze oddělit od každodenních rozhodnutí a profesionální činnosti. Díky tomu usiloval vždy o hledání rovnováhy, jakkoliv to mohlo být nesnadné.

Současně ho fascinovaly dálnovýchodní filozofie a asijské kultury, jejichž klid, vytrvalost a vyrovnané vnímání proměnlivosti světa rezonovaly s jeho vlastními hodnotami. Vzpomínám si, že mi jednoho dne u irské kávy vyprávěl, jak si nechal změřit auru. Vyšla mu oranžová, jen krok od osvětlení. Usmála jsem se tehdy a poznamenala, že podle mě by mu přeci jenom více rezonovala fialová. Byl překvapený, že jsem znala barev, které vedou k osvětlení, já však v tu chvíli

reagovala intuitivně. Dnes, po skoro deseti letech, jsem si však už naprosto jistá tím, že pokud aury a osvětlení skutečně existují, ta jeho do fialové barvy již dozněla.

I přes vážné zdravotní neduhy, které profesora Daňhela poslední roky provázely, se nikdy nepoddal. Jeho tělo mohlo být zmáhané, ale duch byl vždy nad hmotou... Opravdu nikdy si nestěžoval, a i v těch nejnáročnějších chvílích si zachovával klid a pokoru, které mu pomáhaly přijímat vlastní slabosti a proměny těla. Ta neuvěřitelná a chvílemi až nepochopitelná schopnost nést tíhu nemoci s takovou vyrovnaností a lehkostí odhalovala hloubku jeho charakteru; člověka, jehož vnitřní síla, moudrost a otevřenost světu byla mnohem silnější než cokoli, co mohlo omezit jeho tělesnou schránku.

Bylo zjevné, že ve své rodině, v manželce, dcerách a vnoučatech nacházel vždy klidné zázemí a pevnou lásku, která mu dávala podporu ve všem, co dělal. Kolegové a přátelé proto mohli být svědky jeho neustálého a neúnavného elánu psát, objevovat a nacházet nové cesty poznání. A bylo to právě psaní, které mu v posledních letech přinášelo kromě radosti i únik, protože ve chvílích tvorby dokázal zapomenout a přeměřovat své myšlenky pozitivním směrem.

Zanechal po sobě obdivuhodný odkaz v podobě mnoha článků, příspěvků a dalších rozličných publikací, který nese jeho charakteristický a nezaměnitelný rukopis. Profesor Daňhel často sděloval několik myšlenek v jednom rozvětveném souvětí, což při čtení vyžadovalo absolutní intelektuální přítomnost a koncentrovanost. Ano, přiznávám se, že jsem si mnohdy jeho písemné projevy musela číst několikrát, protože každé mé myšlenkové odběhnutí znamenalo ztrátu souvislostí, k nimž jsem se musela znovu vracet, abych plně porozuměla jemným logickým vazbám skrytým v jeho větách.

Zásadní je ovšem to, že jeho texty vždy působily kompaktně a měly v sobě mnoho nosných témat vytvářejících myšlenkový prostor, který lze do budoucna dále rozvíjet a pokračovat v něm.

Ač se nyní loučíme, víme, že stopa profesora Daňhela zůstane neodmyslitelně s námi všemi a nikdy nezmizí. Je v našich vzpomínkách, v jeho učeních a samozřejmě, jak již bylo psáno výše, také v jeho slovech znějících v tichu, které po něm zůstalo...

Rodině vyjadřujeme hlubokou účast.

Odpočívajte v pokoji, pane profesore. Čest Vaší památce.

Za kolegy, studenty a přátele

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