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The History and Development of Business Interruption Insurance

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IMPORTANCE The importance of business interruption (BI) insurance as it relates to the experience of businesses following disasters or other major losses has become clear, as risk management professionals consistently rank business interruption as the most significant corporate threat to businesses globally. Of late, business interruption claims brought about by cyberattacks and global pandemics have been of interest to industry participants. Understanding the history of this important source of coverage in the private insurance market and its development is important to insurance regulators and other policymakers who are wrestling with the way forward.

OBJECTIVES The objectives of this paper are to:

1. Chronicle the development of BI insurance in the U.S. by providing an exposition of the various forms of this insurance in the order in which they emerged.
2. Describe the major policy formats that have been available to provide cover for the disruption of business.
3. Identify significant legal rulings and insurance catastrophes that have served as inflection points in the development of BI insurance.

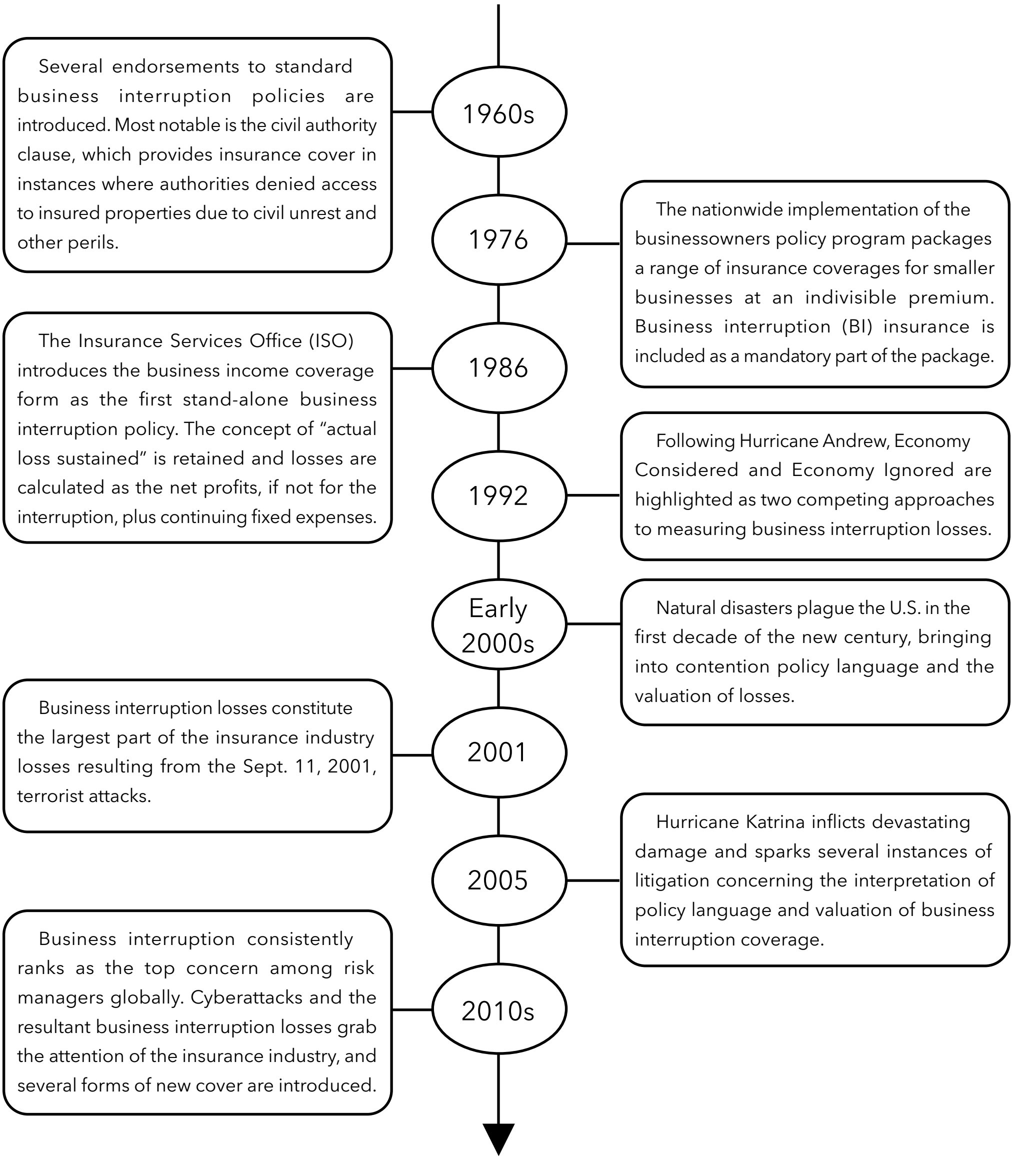
RELEVANCE Although the theoretical premise of BI insurance is quite simple, the accurate determination of covered losses for this type of insurance has proven to be challenging in practice. The complexity of BI insurance was highlighted most recently in the context of the COVID-19 global pandemic, with the vast majority of COVID-related insurance litigation arising from BI insurance policies. Many of these cases are yet to be concluded, and new cases continue to be filed, further emphasizing the economic importance of this insurance to society.

The businesses covered by BI insurance are non-static. As the modern economy continues to grow more complex, the intricacies of BI insurance continue to deepen. The comprehensive review of the history of BI insurance provided in this paper offers a firm foundation for ensuring thoughtful product development and insurance regulatory decisions that will support the continued evolution and availability of this important coverage.

TIMELINE AND SUMMARY

Early records indicate that the practice of insuring anticipated profit has long been accepted in maritime insurance, as it was recognized that the loss of property had financial consequences beyond the direct value of the lost property itself.

- **1797** — Minerva Universal Insurer introduces additional coverage for consequential costs to a fire insurance policy in the United Kingdom (UK).
- **Mid-1800s** — Use and occupancy endorsements to fire insurance become the first commonplace form of business interruption cover in the U.S.
- **1880** — Per diem insurance policies that pay out an agreed amount per day of suspension are introduced in New England.
- **1887** — The first standard fire insurance policy to be used across multiple states is introduced in New York. Cover for business interruption continues to be provided based on the period of suspension.
- **Mid-1800s** — The concept of "actual loss sustained" is introduced with the aim of offering compensation that more accurately indemnifies losses brought about by disruption of business.
- **1918** — A second standard fire insurance policy is introduced in New York and widely adopted in other states. It introduces an analytic rating schedule for the use and occupancy hazard.
- **1929** — The two item contribution plan is launched to allow ordinary payroll to be insured separately from net profits and continuing expenses.
- **1938** — The single item gross earnings policy is introduced to cover lost sales for mercantile business under a single amount of insurance. Similar policies for non-mercantile business soon follows.
- **1943** — A third standard fire insurance policy is introduced in New York and adopted nationwide. The endorsement for business interruption recognized that there may be no relationship between the extent of direct physical damage and the value lost due to the interruption of business.
- **1953** — A simplified earnings plan, which places a monthly limit on loss recovery, is introduced for non-manufacturing risks. It becomes available to manufacturers in 1972.


1960s
Several endorsements to standard business interruption policies are introduced. Most notable is the civil authority clause, which provides insurance cover in instances where authorities denied access to insured properties due to civil unrest and other perils.
1976
The nationwide implementation of the businessowners policy program packages a range of insurance coverages for smaller businesses at an indivisible premium. Business interruption (BI) insurance is included as a mandatory part of the package.
1986
The Insurance Services Office (ISO) introduces the business income coverage form as the first stand-alone business interruption policy. The concept of "actual loss sustained" is retained and losses are calculated as the net profits, if not for the interruption, plus continuing fixed expenses.
1992
Following Hurricane Andrew, Economy Considered and Economy Ignored are highlighted as two competing approaches to measuring business interruption losses.
Early 2000s
Natural disasters plague the U.S. in the first decade of the new century, bringing into contention policy language and the valuation of losses.
2001
Business interruption losses constitute the largest part of the insurance industry losses resulting from the Sept. 11, 2001, terrorist attacks.
2005
Hurricane Katrina inflicts devastating damage and sparks several instances of litigation concerning the interpretation of policy language and valuation of business interruption coverage.
2010s
Business interruption consistently ranks as the top concern among risk managers globally. Cyberattacks and the resultant business interruption losses grab the attention of the insurance industry, and several forms of new cover are introduced.

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ABSTRACT

This paper chronicles the development of business interruption (BI) insurance in the U.S. The origin of modern-day BI insurance is traced as it evolved from so-called "profits insurance" in the United Kingdom (UK) and an endorsement to basic fire insurance policies in the U.S. to stand-alone BI insurance as it is known today. This paper identifies significant legal rulings and insurance catastrophes that have served as inflection points for the development of BI insurance, as well as major policy formats that have provided cover for the disruption of business.

More recently, various forms of BI insurance have become commonplace. Stand-alone policies provide cover for "standard" perils, while endorsements to risk-specific policies (e.g., cyber risk) provide business income coverage for non-standard risks. Of late, business interruption claims brought about by cyberattacks and global pandemics have been of interest to industry participants.

The comprehensive review of the history of BI insurance provided in this paper offers a firm foundation for ensuring thoughtful product development and insurance regulatory decisions that will support the continued evolution and availability of this important coverage.

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Introduction

It is well established that the financial consequences of damage or destruction to property may extend far beyond the property's value alone. Whether insured or not, disruption to normal business operations can be particularly devastating to commercial enterprises, as highlighted by COVID-19-related disruptions (Bartik, et al., 2020). Similarly, the Federal Emergency Management Agency (FEMA) expects 40% of companies not to reopen following a natural disaster and an additional 25% to fail within one year (Insurance Information Institute, 2021). Business interruption has thus grown to be regarded as the most significant threat to business solvency by global risk management experts and business continuity professionals (Allianz Global Corporate & Specialty, 2021; World Economic Forum, 2015).

Business interruption (BI) insurance aims to offset the subsequent financial consequences of a disruption to normal business operations by a covered peril. The insurance indemnifies the insured during a period of partial or total shutdown for the profits (and some expenses) the business would have made (incurred) if no interruption had occurred.

Consequently, BI insurance has become a fundamental part of all corporate risk management strategies. Preliminary results from a National Association of Insurance (NAIC) data call in 2020 showed that nearly 8 million commercial insurance policies included business interruption coverage. Despite the importance of this type of insurance protection for businesses of all sizes, a review of this coverage and the history of its development is largely missing from the scholarly and business literature.

In the field of risk and insurance, prior academic work on BI insurance has focused either on the modelling of expected losses or the accurate estimation of insured losses from past events (Bisco, Fier, & Pooser, 2020; Rose & Huyck, 2016; Zajdenweber, 1996). Academic work in the insurance law field has focused on settling disputes relating to business interruption claims arising from specific catastrophes (French, 2013; Miller & Jean, 2010). In turn, authors in management science have focused on incorporating BI insurance as part of a comprehensive risk management strategy (Kornegay, Killian, & Pickens, 2018).

This paper follows a chronological approach providing an exposition of the various forms of BI insurance in the order in which they emerged in the U.S. The coverage was originally known as use and occupancy insurance and eventually evolved into the business income coverage used today. Various endorsements to standard business interruption policies developed in response to coverage demands are also considered.

Over time, differing policy formats have emerged with consideration as to the nature and size of the operations for which the coverage is intended. Policy changes have predominantly been aimed at producing a more accurate measurement of the losses brought about by a disruption. This process has not been straightforward, and critical changes in policy forms have often followed major catastrophes and legal rulings. These are also examined in this paper. The complexity of BI insurance was highlighted most recently in the context of the COVID-19 global pandemic, with the vast majority of COVID-related insurance litigation arising from business income insurance policies (Covid Coverage Litigation Tracker, 2022).

Ultimately, the importance of BI insurance as it relates to the experience of businesses following disasters or other significant losses have become clear, as risk management professionals rank business interruption as the most significant corporate threat to businesses globally (Allianz Global Corporate & Specialty, 2021). More than two-thirds of risk managers indicate that they review their business interruption coverage at least annually, with 40% having submitted a business interruption claim in the past five years (Risk Management Society, 2017). However, coverage of smaller businesses remains low, as it is estimated that only 30%–40% of small business owners carry BI insurance (National Association of Insurance Commissioners, 2022). The comprehensive review of the history of BI insurance provided in this paper offers a firm foundation for ensuring thoughtful product development and insurance regulatory decisions that will support the continued evolution and availability of this important coverage.

Use and Occupancy Insurance and Profits Insurance

Like so many other modern insurance contracts, the origins of BI insurance can be traced back to Lloyd's of London and practices adopted in marine insurance. In turn, much of the development of the London insurance markets in the mid-16th century stems from Dutch and Italian insurance customs, two of the other major sea-faring mercantile nations of that period. The practice of insuring anticipated profit has long been recognized in marine insurance (Hickmott, 1982). In particular, the Dutch compilation of laws from 1608, known as the *Antwerp Compilatae*, presented several insurance customs in place at the time, including notions related to business interruption (Rossi, 2016). In fact, in the context of business disruption, the *Antwerp Compilatae* did not refer to the indemnification of losses but instead to a broader concept of the "making good of losses."

This was consistent with the general principles of early maritime insurance and risk transfer as understood by the Venetian mercantile community in the 1590s. In opposition to a proposed law on a compulsory cost-based valuation of insured cargo, the Venetian merchants recognized that using an insured value equal to the cost of the object at risk would mean that if the cargo was lost, only the value at which it was purchased could be recovered. This would imply a forfeiture of the profit the merchants hoped to realize upon selling the cargo at its destination. The merchants thus contended that indemnity should include the *entire* consequence of a covered insured event, not only the direct loss (Rossi, 2016). Though other questions remained (e.g., valuing property at the origination or destination), it was made abundantly clear that the loss of an item often had financial consequences beyond the direct value of the lost item, that consequential losses were significant, and that there was a demand for insuring such losses.[1]

In the London markets, the case of *Barclay v. Cousins* (1802) resolved that the profits to be made on the cargo of a ship can indeed be deemed insurable (Hickmott, 1982). It was ruled that if goods can be insured against a specified peril, the profits to be realized on the sale of those goods can also be insured against the same peril.

1. Not to be confused with the legal concept of "consequential loss" referring to indirect damages resulting from the breach of contract as established under English law following *Hadley v. Baxendale* (1854) and American jurisprudence following *Primrose v. Western Union Telegraph Company* (1894).

Marine insurance policies thus came to be classified as "valued" or "unvalued." Under a valued policy, the insured and the insurer agreed on the value of the insured goods, which typically included anticipated profit, at the commencement of the policy. In the event of a loss, this "agree value" was binding. On the other hand, with unvalued policies, no cover for anticipated profit was included.[2] Contrary to marine policies, establishing an agreed value, which could include an addition for anticipated profit, was not adopted in early property insurance. The first fire insurance policies were the marine equivalent of "unvalued" contracts that entitled the insured to recover the direct value of the insured item that was lost, but no more.

The first insurer to introduce additional coverage for consequential costs to a fire insurance policy appears to be the United Kingdom (UK)-based Minerva Universal Insurance, which did so in 1797 (Morrison, Miller, & Paris, 1987). The policy made an earnest attempt at insuring business profits, but the enterprise ultimately failed, arguably due to the primitive book-keeping standards of the time (Hickmott, 1982).[3] Regardless, profits were insurable with *Lucena v. Craufurd* (1806) determining as much, though the decision noted that the insured profits should be described.

A notable early American case in which the insured's claim for loss of profit was not granted, as it was not explicitly included in the applicable fire policy, was the case of *Niblo v. North American Fire Insurance Company* (1848). The ruling in this case cited two contemporary British cases in which insurance awards for consequential losses from interrupted business due to fire were not granted. In *Sun Fire Office v. Wright and Pole* (1834), it was held that rent payable, the cost of renting alternate premises, and lost profits following a fire at an inn could not be recovered unless expressly covered by the fire policy. Similarly, in *Menzies v. North British and Mercantile Fire Insurance Company Limited* (1847), a manufacturer failed in its claim for consequential damage as a result of loss of occupancy, loss of profits, and wages of servants while buildings were under repair following a fire.

Despite the litigation outcomes of the early 1800s, the concept of consequential losses was established in the property insurance market. It was recognized that direct physical damage could result in loss of profits and significant continuing expenses during the period necessary to repair the damage. Indemnification for indirect losses could include insurance coverage consisting of two parts, one where the indemnity involves a time element and one without a link to time (Huebner & Black, 1957).

An early example of business interruption cover without a link to time was the "chomage" policy, introduced in Alsace, France, in 1857 (Hickmott, 1982). The term translates to "enforced idleness" or "stoppage of work," and the cover was offered as supplement to property insurance policies providing cover against direct losses. The additional cover was provided as a fixed percentage of the damaged or destroyed stock, to compensate for the loss of profits that the sale of that stock would have generated. Chomage policies were thus valued contracts based on the principle of marginal cost recovery. Therefore in the event of a partial claim under the direct loss policy, the same percentage would be applied to an accompanying chomage policy.

2. Of course, the notion of agreed value coverages continues to this day in many contexts.

3. Consistent accounting standards were not developed until the mid-1800s with The Institute of Chartered Accountants of Scotland (ICAS) forming in 1854, The Institute of Chartered Accountants in England and Wales (ICAEW) in 1880, and the American Institute of Certified Public Accountants (AICPA) in 1887.

The chomage principle was later adopted in the UK under the names "percentage of fire loss" and "pay as paid" policies, where it was customary to restrict the sum insured to 10% of the value of the covered stock. However, these policies were not considered to be indemnity-based policies, since an insured's trading losses are not necessarily proportionate to the loss of stock and no account was taken of damage to buildings or machinery.

Although some business interruption-related cover without a time element can be found in modern insurance products (e.g., selling price valuation, agreed values, etc.), standard business interruption policies are considered to be "time element coverages." In the U.S. insurance market, this distinction was made clear from the outset, where BI insurance was initially known as "use and occupancy" insurance. In the UK, however, despite "time loss" policies being introduced as far back as 1821, cover for consequential losses were referred to as "profits insurance" well into the 20th century. These policies will be discussed further in later sections.

Time Loss Policies

In 1821 in the UK, the Beacon Fire Insurance Company introduced the "per diem" principle of offering fixed daily compensation while the insured firm is prevented from conducting business. This time loss policy recognized the relationship between trade losses and the loss in working time and thus introduced a "weekly allowance to tradesmen and others deprived by fire of the means of pursuing their usual vocations."

In the U.S., 1880 saw the independent introduction of two per diem insurance policies by an insurance agent in Boston, MA, Henry R. Dalton, and a textile mill operator from New England, Edward Atkinson (Bardwell, 1982). The policy that Dalton developed agreed to pay the insured $\frac{1}{300}$ of the policy's agreed value for each day of total suspension. Later varieties allowed for benefits of $\frac{1}{50}$ per week and in some jurisdictions $\frac{1}{12}$ per month, with further modifications aimed at altering the policy amount to coincide with seasonal fluctuations in the underlying business. Hence, policies covering seasonal businesses specified different agreed values for different parts of the year.

Meanwhile in the UK, a Scottish chartered accountant and amateur archaeologist, Ludovic MacLellan Mann, developed a system for insuring anticipated trade profits by combining long-established insurance principles with the progress made in accounting precision (LMI Group, 2021). The consequential fire loss indemnity policy was introduced in 1899 and formulated a "turnover-basis" that covered both the profit and the "standing charges" of the insured business. Losses were measured by comparing the turnover (also revenue or output) for the period affected with the turnover for the corresponding period in the year preceding the damage. These policies where thus contracts of indemnity which would compensate the insured for losses sustained during a period of reduced turnover following physical damage. Losses were determined through a consideration of the accounts of the business during a specified period, and the policies were later known as consequential loss or profits insurance

Similarly, the American insurance markets of the early 1900s dropped the agreed value concept in favor of the "actual loss sustained" concept since seasonal fluctuations characterized by changes in business activity could not adequately be accounted for with adjustments in the agreed policy value (Hickmott, 1982). This necessitated a move away from the formulaic per diem principle of offering an agreed sum per day, week, or month of interruption to instead protect the value that the business derived from the "use and occupancy" of its premises and machinery.

"Use and occupancy" insurance thus became the name by which BI insurance was first popularly known in the U.S.[4] Until the 1940s, the term "use and occupancy" especially referenced the loss of production following fire, although in boiler and machinery insurance, the term survived until the 1970s. However, despite the move away from time loss policies, in early court cases arising from use and occupancy insurance, the courts continued to accept use and occupancy policies as providing indemnity through a per diem valuation.[5] Subsequent policy forms thus explicitly stated that the subjects of insurance were to be net profits and continuing expenses, although the term "use and occupancy" remained and in time became synonymous with BI insurance in the U.S.

Use and Occupancy as an Endorsement to Fire Insurance

At the same time, use and occupancy insurance was established as an extension of fire insurance in recognition that fire damage may extend beyond the direct loss of property and also disrupt normal business operations. Throughout the late 1800s and 1900s, the connection to fire insurance remained strong. Hence, the drive towards standardized fire insurance contracts also affected standardization of business interruption policies (Evans, 1914).

The First New York Standard Policy for Fire Insurance (1887)

Before widespread standardization, each insurer prepared its own insurance form (including fire insurance forms), which impeded the growth of business interruption coverage in the same way as the lack of uniformity in accounting standards had done previously. This condition was not easily resolved, despite earnest efforts to produce a standard fire insurance policy at the first annual meeting of the National Board of Fire Underwriters in 1867 (Wenck, 1968).

The first standard policy to be used across multiple states resulted from a statute passed by the New York state legislature stipulating that the Insurance Superintendent of the state was to prepare a standard policy, unless the New York Board of Fire Underwriters did so first (Wenck, 1968). The Board of Fire Underwriters took the initiative and filed a standard policy and standard modifying endorsements. The policy became known as the New York 1886 policy (despite becoming effective in 1887).

During the late 1800s, however, coverage of business interruption using the per diem concept was still commonplace. Recall that this concept relied on an agreed value rather than the actual loss sustained. This feature of early BI insurance often resulted in claim payments exceeding actual losses, a situation bemoaned at the

4. Although the term "business interruption insurance" appeared in the U.S. as early as 1908, it came into popular use much later, as "use and occupancy" insurance and later "gross earnings" insurance were initially the preferred terms for this type of cover.

5. For example, see *Michael v. Prussian National Insurance Company* (1902), *Tanenbaum v. Simon* (1902), and *Tanenbaum v. Freundlich* (1903).

above-mentioned inaugural meeting of National Board of Fire Underwriters (National Board of Fire Underwriters, 1867).[6]

The San Francisco Earthquake (1906)

Although several states had adopted the New York 1886 policy as the standard policy, no standard form was prescribed in California at the time of the San Francisco earthquake and subsequent conflagration in 1906. (The New York 1886 policy was used by some insurers in California.) The lack of a standard policy led to several complications in the process of loss adjustment and settlement after the earthquake (Mowbray & Blanchard, 1969). Some insurers denied liability due to earthquake exclusions, whereas a few others covered losses, including some Lloyd's syndicates. The earthquake ultimately cost Lloyd's more than $50 million in 1906, the equivalent of more than $1.5 billion in 2022 (Carter & Falush, 2009).

Soon after, a commission comprising various stakeholders was appointed to draft a standardized fire insurance policy for California. On March 18, 1909, a revised version of the New York 1886 policy was adopted as the California standard policy for fire insurance. This remained the standard policy in California until 1949 (Mowbray & Blanchard, 1969). Although the California standard policy did include coverage for losses resulting from interruption of business, in practice, insurers were only liable to compensate for such losses if they were separately insured as "profits" and valued *prior* to the loss (Williams, 1913). The inclusion of rent as a part of profits that could be insured also bears mentioning. In practice, retail businesses were charged rent based on a proportion of sales (Hickmott, 1982). Hence, if a property became untenable following a fire, it would result in the cessation of rent receivable by the owner—an insurable interest that could be covered.

The Second New York Standard Policy for Fire Insurance (1918)

The California standard policy was, however, considered to be more insured-friendly than the New York 1886 policy, which led to agitation within the industry and emphasized the desirability of a uniform policy nationally (Mowbray & Blanchard, 1969). Following *Paul v. Virginia* (1869), this could not be accomplished by federal legislation. Hence, in 1913, the New York legislature directed the Superintendent of Insurance of New York to request that the National Convention of Insurance Commissioners undertake the preparation of a new standard fire insurance policy.[7] The New York 1918 standard policy was thus adopted in New York on Jan. 1, 1918. This version either formally or informally (through widespread adoption) became the dominant form in New York, as well as in several other states. However, the original 1886 policy, as well as a policy emanating from Massachusetts (the Massachusetts standard policy of 1873), were also in use across the states. Thus, the updated New York 1918 standard policy resulted in greater variation across states (Wenck, 1968).

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6. The Boards' Committee of Adjustments thus recommended that claims payments should be delayed for a period of 60 days following the claim date (referred to as the "date of proofs") to allow for a rigorous claims assessment.

7. The National Convention of Insurance Commissioners changed its name to the National Association of Insurance Commissioners (NAIC) in 1936.

While the form was moving towards standardization, the rating for the general use and occupancy hazard changed from "open rating" to the use of an analytic rating schedule. In this regard too, there was no uniformity as it became practice to assign different business interruption rates to different manufacturing plants, without any consistency in the interpretation of the rating schedule among different rating bureaus. The discretion of underwriters, particularly in their responsibility to perform both rating and loss adjustment duties for business interruption coverage, meant that such underwriters attracted relatively high compensation. This brought about further agitation in the market, and the desire for simplification and uniformity ultimately resulted in a third New York standard policy being introduced in 1943 and widely adopted across the country (Wenck, 1968).

The Third New York Standard Policy for Fire Insurance Policy (1943)

In 1936, the NAIC appointed a special committee to prepare a standard fire insurance form. After three years, a form was submitted and approved by the NAIC, but it failed to be adopted in any state. A new form was adopted in New York on July 1, 1943, and was soon used with little or no modification in all but three states (Mowbray & Blanchard, 1969).[8] The standard fire insurance policy provided cover for loss "without compensation for loss resulting from interruption from business or manufacture," but it provided for the additional coverage of consequential losses through endorsement, which was stipulated as business interruption, rent, leasehold, builders' risk, and additional-living-expense. These endorsements thus continued cover where the standard policy ended.

The preference for bundling BI insurance with fire insurance, or more general property insurance cover, arguably recognizes that covered losses may cause a partial or complete interruption of business. However, the magnitude of the covered direct property loss may be unrelated to the amount of business interruption loss. In the 1943 standard policy for fire insurance, coverage was thus provided by way of endorsement for interruptions that may result in loss of net profits that would otherwise have been earned and the incurring of necessarily continuing expenses that are not covered by continuing income. In time, the policy also became known as the 165-line standard fire policy, referring to the physical length of the policy. It was frequently used as a comparison for the businessowners policy when it was introduced (Policy Form & Manual Analysis Service, 1976).

Indemnity and the Question of Business Trends and Variations

By the 1920s, the practices pertaining to BI insurance in the U.S., where it was now known as use and occupancy insurance, and the UK, where it was still known as profits insurance, had diverged considerably. Profits insurance in the UK specified insurable earnings relative to a predetermined standard based on either the insured

8. The exceptions being Maine, Minnesota, and Texas, where the forms in use were either based on or similar to the New York form (Wenck, 1968).

company's quantity (or value) of output or the turnover of the business (Kahler, 1932).[9] Losses were expressed as a ratio based on the reduction in this standard following a business disruption, and policies allowed for periodic payments to be made to the insured. Losses were assumed to continue until the agreed upon standard had been restored, and loss adjustments thus continued until the interruption had ceased, in recognition that normal business operations are typically not resumed immediately upon the repair or replacement of property.

This differed from the U.S. practice adopted in use and occupancy insurance, where the loss adjustment process initially did not allow for the payment of losses in installments over the period of the interruption. It was also recognized that the rigid application of a predetermined standard would lead to insurance benefits that were disproportionate to the loss suffered if there had been material changes in the ratio of insurable earnings relative to the standard that had previously been agreed upon (Hickmott, 1982). Insurance adjusters were thus granted a degree of latitude in determining loss amounts of use and occupancy insurance policies. While this necessitated better-trained and more competent adjusters, it resulted in insurance benefits that were meant to be commensurate with the losses suffered (Kahler, 1932).

The U.S. and UK systems, therefore, each had its own benefits. The U.S. system was deemed to be superior in determining the *value* of insured losses, while the UK system was deemed superior in determining the *period of indemnity* (Kahler, 1932). The market was thus ripe for an insurance product that would combine the relative advantages of the different practices to provide full consideration of the actual operating conditions during the period of interrupted business. This would entail the payment of losses in installments as the interruption continued and holding open the final settlement beyond the restoration of property until the full effects of interruption had dissipated.

Indemnity thus remained the underlining principle for BI insurance as it developed in the U.S. as policies stipulated that payment should be made based on the actual loss sustained *following* the occurrence of the insured event. In determining this loss, it became practice to give due consideration to the experience of the business before the date of damage and the probable experience thereafter had no loss occurred. It was thus established that insurance cover would be limited to continuing charges and expenses that would have been incurred had the insured peril not occurred (Hickmott, 1982).[10]

Further guidance in determining the actual loss sustained was provided by the ruling in the case of *Miner-Edgar Company v. North River Insurance Company* (1928) argued before the Appellate Division of the Supreme Court of New York. The court ruled, based on an analysis of several related Court of Appeals rulings from New York and other states, that in order to bring about complete indemnity, all relevant information used for an accurate loss estimate was to be considered (National Association of Cost Accountants, 1928).[11] Importantly, this meant that any reasonable method of valuation could be relied on and that loss estimation would not be confined to a single method of valuation.

9. Alternative standards could also be specified if deemed to be more appropriate for the insured business.

10. This was the ruling in *Goetz v. Hartford Fire Insurance Company* (1927).

11. The notable New York Court of Appeals rulings include those of *McAnarney v. Newark Fire Insurance Company* (1928), *Ice Service Company v. Phipps Estates* (1927), and *Rickerson v. Hartford Fire Insurance Company* (1896).

In valuing insured losses, the Maryland Court of Appeals, in the case of *Standard Printing and Publishing Company v. Bothwell et al.* (1923), provided decisive guidance on what would constitute "fixed charges." It was ruled that whether or not items should be included in fixed charges was in no way dependent upon the fact that they were deducted from selling prices to determine net profit, but that their classification as fixed charges were instead solely decided based on an examination of their real nature. It was held that fixed charges were to include necessary expenses incurred in maintaining the efficiency of the insured's organization, including those charges that spread over the entire establishment, such as rent, insurance, taxes, mortgage interest, depreciation, advertising, etc.—all of which would continue whether or not the business was operated. It was also determined that fixed charges would include the salaries of employees whose services could not have been dispensed when the insured is unable to continue the normal operation of the business following a period of interruption.

Two Item Contribution Plan

After several years of development, the two item contribution plan was adopted in 1929 to meet the seasonal coverage needs of department stores. The plan moved away from the per diem principle and was designed to cover seasonal fluctuations by providing a blanket amount of indemnity for the duration of the interruption, without a specified maximum liability per day, week, or month (Schultz & Bardwell, 1959).

The two items of the two item contribution plan specified separately:

1. The dollar value of net profits and continuing expenses, excluding ordinary payroll that would not be earned following an interruption; and,
2. Ordinary payroll, which is to continue during the business interruption until normal business is resumed, but not exceeding 90 calendar days.

Coverage for ordinary payroll was, however, optional as it referred to the wages of workers who could theoretically more easily be replaced in the open market and would not necessarily be retained throughout an interruption (Bardwell, 1982). In contrast, the compensation of officers, executives, department managers, employees under contract, and "other important employees" would form part of ongoing expenses, and not of ordinary payroll. Ongoing expenses would, however, include a deduction for the costs of heat, cooling, light, and power, which would not continue following a loss (Lucas & Wherry, 1954).

Two versions of the two item contribution plan were available, for manufacturing and non-manufacturing businesses. The two versions were simply referred to as Form No. 1 and Form No. 2 since the underwriting process entailed the physical completion of one of two distinct forms. The material difference between the two forms was the definition of the lost income under item (i) above, namely net profits and continuing expenses, less ordinary payroll. For non-manufacturing businesses, lost income was defined as net sales and other earnings, less the cost of the merchandise sold and materials directly consumed in supplying a service. For manufacturers, raw and finished stock were dealt with separately, and the lost income was based on the net sales value of production (Huebner & Black, 1957).

Although the two item contribution plan was widely adopted in its standard form, it also allowed for modification by endorsement. Endorsements were made either by the physical attachment of a supplementary form to the standard policy or by the specifications made in the clauses contained in the standard form. In lieu of the time limits that existed under per diem policies, the two covered items each had a separate coinsurance clause stipulating the percentage of income that should be covered. Initially, all policies specified a minimum of 80% coinsurance, but later 100% coinsurance was introduced, particularly in jurisdictions on the west coast (Schultz & Bardwell, 1959). The coinsurance percentage for item (i) would be applied to the sum of the annual net profits and all ongoing expenses (excluding ordinary payroll) that would have been incurred in the 12 months immediately *following* the date of damage had no loss occurred.

Although the insured event had to occur within the period of the policy, the losses were not limited to the policy term. Hence, an interruption commencing in the last month of the annual policy could result in losses that were covered for as long as 24 months after policy inception (Bardwell, 1982). Since premiums for the two item contribution plan were based on projected earnings for the full 12 months following a potential loss, this meant that earnings had to be projected two years into the future on annual policies, as were typical (Huebner & Black, 1957). In the event of underinsurance, the principle of averaging would be applied so that the insured would receive a lower amount than the full value of the loss, even if the loss was partial.

The two item contribution plan remained popular among manufacturers for several decades, though not for mercantile risks (Lucas & Wherry, 1954). The principal concern among mercantile operations was that the plan would provide excessive coverage, as the buildings occupied by such businesses could often be replaced or repaired in much less than a year, but the coinsurance clause would require large limits (based on long duration of losses) or impose penalties on the insured's recovery in the event of such a partial loss (Bardwell, 1982).

Single Item Gross Earnings Policy

As an alternative to the two item contribution plan, the single item gross earnings policy, or simply the gross earnings plan, was introduced for mercantile businesses in 1938. The key difference was that the two item contribution form treated ordinary payroll separately from the balance of the risk, which allowed for a split basis of coinsurance, to be applied separately to the two parts. Under the gross earnings plan, however, there was only one item and consequently a single basis for coinsurance (Lucas & Wherry, 1954). Similar plans followed for non-manufacturing businesses in 1940 and finally for manufacturing businesses in 1945. (It was still common to underwrite manufacturing business on the two item form and mercantile business on the gross earnings form.)[12] In parallel to the two item contribution plan underwritten on either

12. Over time, the "plans" became known as "forms," thus indicating the close link between the policies and the standardized forms on which they were underwritten.

From No. 1 or Form No. 2, gross earnings insurance was available on either Form No. 3 or Form No. 4.

Form No. 3 offered BI insurance for mercantile and non-manufacturing businesses, and Form No. 4 offered the coverage to manufacturing risks. Form No. 3 thus replaced lost sales, while Form No. 4 replaced lost production and required a "sales value of production" to be established prior to the loss. Both forms provided a single amount of insurance that covered all earnings, with the option to exclude or limit the coverage for ordinary payroll. The market had also grown beyond manufacturing and mercantile risks to include coverage for lost earnings of mining concerns and lost tuition fees at academic institutions following property damage (Bardwell, 1982). BI insurance was, however, not yet offered as a stand-alone product and continued to be regarded as extensions to property insurance policies.

The "single item" insured under the gross earnings plan was once again the actual loss sustained, which described the loss sustained by the insured resulting directly from the interruption of business. Indemnity was thus not governed by a formula, as was the case in the UK at the time, but limited by the stipulation that the loss covered was not to exceed the reduction in gross earnings, less charges and expenses, which do not necessarily continue during the interruption of business (Huebner & Black, 1957). Benefits were reduced if the insured could continue operations, either at the damaged or alternate properties. Cover was also included for expenses incurred in reducing the loss, as long as these did not exceed the amount by which the loss was reduced (i.e., extra expenses).

A consideration of the business experience before the insured event, during the interruption, and probable experience had no loss occurred was thus required. This requirement, instead of a formula-based calculation, has remained in place for the subsequent forms of BI insurance. It later became a contentious issue, as the interpretation of loss valuation language and the evidentiary standard under which actual losses sustained were to be determined often became the focus of litigation between policyholders and insurers, with various outcomes (Hickmott, 1982).

The gross earnings plan also stipulated that the period of interruption (later, period of restoration) would be considered to be the length of time that would be required to repair or replace the damaged property to the extent necessary to resume operations with the same quality of service as existed immediately preceding the loss. Reasonable time was allowed for architects to draw plans, contractors to submit estimates, and for delays in obtaining specialized machinery (Bardwell, 1982). Abnormal weather conditions holding up operations, delay from strikes away from the premises, and other matters outside the insured's control were also covered. Similar to the two item contribution plan, the period of interruption commenced on the date of damage and was not limited by the date of policy expiration (Hickmott, 1982).

Although not formally defined, consideration was also given to continuing standard charges and expenses, including payroll expenses. However, the reference to ordinary payroll was less explicit under the gross earnings plan than was the case with the two item contribution plan, and the choice between the two plans often depended on the cover desired for ordinary payroll. While the two item form separately stated the coverage for regular payroll, regular payroll could either be fully insured or fully excluded under the gross earnings plan and was subject to a single coinsurance stipulation applied to the entire policy (Phelan, 1970). Coverage for wages, however, was not intended to be a form of social benefit but required the insured to establish the need to retain specified employees.

For the gross earnings plan, the coinsurance clause of the two item contribution plan was renamed the contribution clause and allowed for similar coinsurance with greater flexibility. In practice, however, it was often the case that the coinsurance percentage chosen under a gross earnings plan would be lower than that of a two item contribution plan. Options for coinsurance percentages of the gross earnings plan often ranged between 50% and 80% (in increments of 10%).In comparison, the coinsurance options for the two item contribution plan would be 80% or 100% (Lucas & Wherry, 1954). For the gross earnings plan, additional coinsurance options were later introduced in many jurisdictions, and the combination of the coinsurance percentage and estimate of future earnings were relied on to ascertain what the appropriate amount of insurance would be and to ensure that sufficient coverage was bought.

The sum insured under gross earnings plans was determined by the use of worksheets, which were to be completed annually to provide an updated declaration of the gross earnings to be insured. Worksheets were used for premium calculation and the stipulation of coinsurance percentage in the contribution clause, but they were not further relied on in establishing the actual loss sustained (Lucas & Wherry, 1954). Gross earnings were defined separately for manufacturing and mercantile risks but essentially took a top-down approach that entailed subtracting input costs from revenue. Cover was provided up to the sum insured, and indemnity was limited to the period of interruption, as described above.

It was thus no longer necessary to forecast daily or weekly fluctuations in business, as was required under the per diem forms of the previous century. Instead, the anticipated period of interruption had to be estimated. This was particularly relevant for selecting the coinsurance percentage since an accurate specification of future earnings combined with a 50% coinsurance clause would provide reimbursement (without penalty) for losses as short as six months.

To illustrate the value of BI insurance to business owners, insurance underwriters would often calculate the "annual earnings exposed to loss" under a gross earnings policy to recommend a suitable level of coverage (Bardwell, 1982). Such a calculation would be conducted by completing a BI insurance proposal form or a BI insurance appraisal form.

To allow for flexibility in coverage, several modifications to the standard policy were allowed by way of endorsement. A gross earnings plan would, therefore, not necessarily be a self-contained contract, but often it would include attached forms dealing with additional cover. For example, to protect the receiver of rental income, the gross rental form might be attached to provide cover for the loss of income following damage and include cover for additional costs necessary to expedite the repair work to the extent that this would reduce the loss. Contingent BI insurance offers another example of an endorsement. This provided cover against interruptions arising from property damage at customers', suppliers', and manufacturing locations

(Bardwell, 1982).[13] Cover was only provided for "contingent properties" listed on the policy form and when the interruption was due to a peril included in the primary insured's property insurance policy. Further forms would often be attached to cover the commission of selling agents and extra expense insurance, both of which were not part of the standard gross earnings plan.

Other notable extensions included blanket policies, which allowed for multiple buildings at distinct locations to be covered under the same policy, and premium adjustment plans, which were designed for businesses with growing earnings (Huebner & Black, 1957).[14] The premium adjustment endorsement thus entailed purchasing more coverage than was strictly required under an 80% contribution clause and for the insured to report on actual gross earnings at the end of the year so that a refund of the excess premiums paid could be made. This endorsement thus prevented the application of averaging at the time of the loss.

Following the widespread riots of the 1960s, and in particular 1966, it also became commonplace to extend business interruption coverage for up to two weeks in situations where damage to other premises adjacent to the insured property resulted in civil authorities denying access to the insured property (Bardwell, 1982). To ensure that policies kept to the original intent of coverage, the standardized forms in most territories added a specification in 1968 that the order of civil authority must be the direct result of damage or destruction of property. Later, as the wave of demonstrations continued across the country, such disruptions became insurable separately under an interruption by civil authority clause, with cover typically commencing 72 hours after the initial disruption and extending to a maximum of four weeks.[15]

Since the intention of the gross earnings plan was to cover the loss of *future* earnings as a consequence of property damage, the profits lost on finished goods were dealt with separately (Schultz & Bardwell, 1959). For manufacturing businesses, it was assumed that finished goods would have no influence on production and that only damages affecting the productive ability of the business, including raw stock and stock in process, were covered. This was done to avoid moral hazard, as finished stock often takes longer to turn over than to produce, so that a period of interruption based on the longer turnover period would lead to excess cover when the lost stock could be reproduced in a shorter period. The profits lost from the damage or destruction of finished goods were thus excluded, as such losses could be insured separately through endorsement as profits and commissions insurance.

Simplified Earnings Plan

Initially, marketing of the single item gross earnings plan produced lackluster results, as it was aimed at larger operations and was ill-suited for small and medium-sized enterprises. For mixed manufacturing and mercantile businesses, it also became a

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13. Later policies were extended to also cover "leader properties," which are defined as nearby flagship businesses that attract customers to the insured business. Secondary contributing and recipient locations were also later allowed to be unnamed.

14. Under simplified earnings plans, however, blanket policies were only permitted if the insured buildings were located on the same premises.

15. The 72-hour "waiting period" would become the norm for all business interruption policies in the mid-1990s.

rather involved procedure of determining which form to use and, coupled with the required contribution clause, did not result in widespread adoption. A survey from the early 1940s of more than 20,000 firms, conducted by the National Association of Credit Men, indicated that 61% of manufacturers did not carry any form of BI insurance, and 52% of the surveyed businesses had never been offered this form of insurance (Miller, 1946).

Consequently, a simpler policy was designed for smaller mercantile and other non-manufacturing risks, with the first version being launched on the west coast in November 1953.[16] The new policy was known as the simplified earnings plan, or simply the earnings plan, it and combined the concept of the single-item form with the older per diem principle (Bardwell, 1982). It was soon adopted nationwide with minor modifications.

The key difference between the simplified earnings plan and the gross earnings plan was that the former had no contribution clause in which a coinsurance percentage was stipulated.[17] Instead, the simplified earnings plan limited insurer exposure by introducing a monthly limit on loss recovery, specified as a fixed percentage of the total policy amount. The policy amount was based on projected gross earnings, and the insured suffered no penalty if these were underestimated (other than being underinsured). The benefits that the insured could collect for any single month of interruption were typically specified as 25% of the total policy amount, and monthly limits were not cumulative. This shielded the insurer against underinsurance ensuring policyholders carried sufficient insurance.[18] In contrast, under gross earnings plans with a contribution clause (also coinsurance clause), the insured would be penalized if the insured limit did not equal an agreed percentage of the total amount at risk, which in turn was based on the revenue that the insured business would have produced if no interruption had occurred (Huebner & Black, 1957).

Both plans referred to the "actual loss sustained" in the coverage calculation, but the simplified earnings plan estimated the loss amount through a bottom-up calculation to provide a minimum level of coverage, while the gross earnings plan took a top-down approach with the aim of providing full indemnity. Under the simplified earnings plan, the "earnings" that were to be insured were calculated by adding to net profits the payroll and other operating expenses of the insured business. Although the cover provided was based on projected earnings, it was not a valued policy and included no provision that the monthly limit was to be prorated if the interruption was for less than 30 days (Bardwell, 1982).

Thus, by the late 1950s, there were three business interruption policies available in the market: 1) the two item contribution form; 2) the single-item gross earnings plan;

16. John D. Phelan of the American States Insurance Company in Indianapolis was particularly instrumental in the development of the simplified earnings plan in the early 1950s. At the time, this form of coverage was also known as the "earnings insurance form."

17. In time, the simplified earnings plan also became known as the "noncontribution form," thus making clear its distinction from the gross earnings plan.

18. This is similar to the monthly limit of indemnity option, which currently allows insureds to delete the coinsurance provision.

and 3) the simplified earnings plan.[19] The ease of use of the simplified earnings plan, however, meant that additional complexity (through a coinsurance requirement), if desired (perhaps for a lower rate), could only be introduced via the gross earnings form. Consequently, the gross earnings form soon allowed for greater flexibility in its approach to ordinary payroll and, as this was previously the distinguishing feature of the two item contribution form, the latter fell out of favor during the 1960s.

The gross earnings form thus offered the most complete form of business interruption coverage, although the standard policies made no allowance for business volumes prior to the interruption and merely provided coverage up to the day of reopening, without recognizing that pre-disruption volumes were unlikely to be regained immediately upon reopening. Later, the limit applied to the replacement of raw stock or stock in process was stipulated as 30 days longer than it took to repair the damaged property or equipment. This limit could be increased through an endorsement to extend the period of indemnity, with a commensurate adjustment in premium, and was later removed in several territories. In its place came a requirement to resume business with "due diligence and dispatch" (Phelan, 1970).

The simplified earnings plan was not available to manufacturers prior to December 1972 and could only be used to cover non-manufacturing risks (Bardwell, 1982). Due to the absence of a coinsurance clause, the simplified earnings plan was also relatively more expensive, although the rates for both the gross earnings plan and simplified earnings plan were typically derived from the building rates on fire insurance policies.

Throughout the 1970s, the various business interruption policies were still not available on a stand-alone basis but only as an endorsement to property insurance policies covering damage by fire, windstorm, or other direct damage. In practice, however, this limitation could be overcome. Since the policyholder insured against direct loss is not necessarily the same business owner that has an interest in the use and occupancy of the property, the business interruption endorsement could be attached to a "blank" property insurance policy that did not place a value on the insured property but described the location of the property and the perils covered. The description of the perils covered were particularly important, as most business interruption policies limited cover to perils that directly caused loss of or damage to physical property. The practice of attaching a business interruption endorsement to a blank property insurance form also meant that the (direct) property insurance and business interruption coverage of a business could be provided by different insurers.

The link to property insurance meant that the developments in that line naturally spilled over to business interruption coverage, with the result that policies for terms exceeding one year became available, although an annual examination of earnings was required. For larger businesses, split policies with multiple insurers insuring parts of the same policy were also introduced. Legislative changes of the late 1940s and 1950s also permitted insurance companies to operate as multi-line carriers and, therefore, to combine different types of coverage under a single policy.[20] This notably led to

19. An alternate form of the simplified earnings plan, known as the "specified time plan," was also popular on the west coast. It included an endorsement to extend cover to the additional time required to demolish the *undamaged* parts of a building where a fire had occurred, specifically where this was required by legal ordinance (Bardwell, 1982).

20. Multi-line carriers were first authorized in New York in 1949, and all other states soon enacted similar legislation.

special multi-peril (SMP) policies, which included a loss of earnings endorsement. This provided business interruption coverage that was almost identical to that available under the simplified earnings plan.

Endorsements to Business Interruption

By the 1960s, several endorsements to standard business interruption policies were available. These endorsements satisfied the five criteria as summarized in Borghesi (1993):

1. Physical damage;
2. To insured property;
3. Caused by covered peril;
4. Resulting in a measurable loss due to interruption; and,
5. For the period required to expeditiously restore the damaged property.

To ensure that adequate premiums were charged, the various forms of coverage continued to include limits to reimbursements. Typically, a contribution clause (i.e., stipulating coinsurance) would be made part of the policy (Society of Chartered Property Casualty Underwriters, 1973). The most common endorsements, and a short description of each, are discussed below.

Extra Expense Insurance

Whereas BI insurance covers additional expenditures only to the extent the insured's total loss is reduced, extra expense insurance covers the extraordinary expenses incurred by an interrupted business (due to a direct physical loss) that wishes to continue operations during the rehabilitation period even if that is more costly than discontinuing operations (subject to policy terms and limits). This endorsement was specifically introduced to cover industries where discontinuity in service is expected to result in a permanent loss, such as newspaper circulation (Lucas & Wherry, 1954). Extra expense coverage, therefore, provides additional coverage to BI insurance, with BI insurance generally being more appropriate when the business would not be expected to continue during the interruption, while extra expense insurance is appropriate when a business is expected to remain operational under emergency conditions. Extra expense insurance is also known as "surplus charges" or "additional charges and expense" insurance and has the same requirement of direct physical loss required in business interruption policies.[21]

Leasehold Interest Insurance

This cover protects a lessee against loss resulting from the cancellation of a favorable lease because of a covered peril (Bardwell, 1982).[22] The insurer's liability is limited to

21. Extra expense coverage was ultimately added to standard business interruption policies, and "extra expense (only)" policies were introduced as separate policies.

22. If for any reason the rental value of property increases beyond the amount of rent that the lessee must pay, they are in possession of a favorable lease. The value of this leasehold is the difference between the rent payable for the remaining term of the lease and the present value of the property. This endorsement also now exists as a separate stand-alone policy.

the discounted value of the leasehold at the time of the loss, and the insurance is automatically reduced on a pro-rata basis each month, decreasing as the leasehold value or profit decreases. The insurer's risk depends largely upon the ease with which the lease in question may be cancelled. For this reason, a verbatim copy of the cancelation clause is made a part of the policy, and changes in the clause without the consent of the insurer are prohibited. Two types of leasehold insurance were commonly written, either for the undiscounted amount of the leasehold interest or for the discounted present value of leasehold interest.

Rent and Rental Value Insurance

As the phrase "use and occupancy" fell out of favor, rent insurance became regarded as a separate class of insurance, distinct from general BI insurance. Cover was still provided to protect a property owner against the loss of rental income (or occupancy if self-occupied) due to the property becoming "untenable" from an insured peril covered under a property insurance policy (Mowbray & Blanchard, 1969). Based on the terms of the underlying rental agreement, the tenant may also be the one purchasing the cover. Hence, cover was either provided for loss of income (by the owner) or loss of use (by the tenant).

Profits and Commissions Insurance

Since BI insurance indemnifies for the loss of future earnings from interrupted production and property insurance indemnifies the cost of repairing/replacing damaged goods (but not their profits), this product covered the unrealized profits on damaged goods (Lucas & Wherry, 1954). This extended to goods that had been sold but not delivered. Policies either specified that the insured would recover the full profit on the lost goods (including partial loss) or only in proportion to damage sustained. This assumed that the same rate of profit can be realized on salvaged goods as on undamaged goods.[23]

Selling Agent's Commission Insurance

An endorsement to business interruption policies applied only to sales agents, which covered the loss of net income resulting from an interruption in the business operations of the providers of the merchandise to be sold. This endorsement often supplemented the gross earnings form as the manufacturing property (or properties) on which the sales agent was reliant had to be specified (Bardwell, 1982).

Coverage for Loss of Personal Income

This coverage was an endorsement that provided indemnity against loss of remuneration that would have been received by employees if it were not for the suspension of the employer's operations (Bardwell, 1982). This provided cover for employees not covered under the basic business interruption coverage, either due to being part of excluded ordinary payroll, subject to time limits, or coinsurance clauses.

23. Endorsements allowing for the valuation of finished goods on a "selling price" basis are now available to affect similar coverage (Huebner & Black, 1957).

Tuition Fees Coverage

This endorsement covers actual loss of tuition fees sustained by academic institutions following damage or destruction of buildings by insured perils (Lucas & Wherry, 1954). If the damaged buildings or contents could not be rebuilt, repaired or replaced less than 30 days prior to the start of a new academic year, the period of interruption would be extended to the start of the subsequent academic year.

Specified Time Plan

This was an alternative to the gross earnings policy that was available from the late 1970s on the west coast (only). Under these plans, three items of coverage were specified. Item I specified the coverage of net profit whereas Item II enumerated two groups of expenses, namely the remuneration of personnel, and fixed charges and expenses. To avoid ambiguity in the interpretation of the phrase "fixed charges," Item III allowed for the identification of specific expenses that were to be excluded from the fixed charges of Item II and insured separately (Bardwell, 1982). The full amount of the expenses enumerated under Item III were covered (as would be the case under a 100% contribution clause), subject to a limited period of interruption that was determined at policy inception.

Rain Insurance

As a precursor to event insurance, the 1950s also saw a novel consequential business interruption product known as rain insurance come to market. This policy was, however, not an endorsement to a standard property insurance policy and did not require direct physical damage or loss. Instead, the policy covered consequential losses arising from the cancelation or rescheduling of events due to rain, snow, sleet, or hail (Lucas & Wherry, 1954). Policies were often purchased to cover sporting or entertainment events, and in time, the insured perils became much broader than mere downpours. Similar consequential loss policies in place at the time would cover losses arising out of the interruption of power, light, and water facilities.

Losses Resulting from Electronic Data Processing Damage

As computers became commonplace in commercial activities, they brought with them new perils to be insured. During May and June of 1969, BI insurance forms of most jurisdictions were revised to include a limitation for the loss of earnings resulting from the damage or destruction of media that were to be used in electronic data processing (EDP) (Bardwell, 1982). This media initially referred to paper tapes, punch cards, and magnetic disk, all of which were highly susceptible to destruction by physical perils. Coverage of the lost earnings while the pertinent media was being replaced or restored was initially limited to 30 days, although additional cover was available to extend this period to either 90 or 180 days or to waive the limit altogether.

Businessowners Policy Program

May 1, 1976, saw the nationwide implementation of the businessowners policy (BOP) program, which bundled BI insurance alongside basic property and liability cover for small and medium-sized businesses (Policy Form & Manual Analysis Service, 1976).[24] When first introduced, it was seen as a novel product that took a homeowners insurance approach to the packaging of a broad range of insurance coverages at an indivisible package premium. It was thus viewed as an alternative to the SMP policy program that was in place at the time, which was more suitable for larger business that required greater flexibility in coverage.[25]

The initial BOP program offered two forms, either the standard or special form, with the crucial difference being that the standard form covered *named perils* whereas the special form covered *all risks*. Both forms included mandatory cover for loss of income, which was stipulated as "the actual business loss sustained by the insured and expenses necessarily incurred to resume normal business operation resulting from the interruption of business or untenability of the premises when building or personal property is damaged by an insured peril." It was further stipulated that the actual business loss may not exceed the reduction in gross earnings (less charges not necessarily continuing during the period of operation) and that loss of income benefits would be payable for the period required to resume normal operations, but not exceeding the period required to restore the damage and not exceeding 12 months from the date of loss. The loss of income coverage was thus not limited by the expiration of the policy period, nor did it include a stated limit or contribution (i.e., coinsurance or deductible) clause. It did, however, require the insured to resume normal operation as promptly as possible and use all available means to eliminate any unnecessary delay.

A notable shortcoming of the first standardized BOP form was that premium rating did not include a consideration of the past financial performance of the prospective insured, despite the mandatory loss of income coverage. The only rating factors of the original businessowners application/worksheet that had financial relevance concerned the safekeeping and depositing of cash, as well as a subjective opinion by the underwriter as to the financial stability of the business (Policy Form & Manual Analysis Service, 1976). This shortcoming was soon addressed, at least in part, with the 1983 application form recording the potential policyholders' gross earnings and rental income for the prior 12 months (Policy Form & Manual Analysis Service, 1983). However, it is not clear whether these figures were used in the premium calculation or instead recorded for the purpose of claims adjusting and future use.

By the early 1980s, there was another noteworthy modification to the original BOP coverage relevant to BI insurance. In particular, coverage for loss of earnings resulting from the damage of EDP media was limited to 30 days.[26] Both the standard and special forms of BOP policies stated that "(t)he widespread use of mini-computers

24. Nationwide implementation was six months later than intended, as the initially proposed boiler and machinery coverage was reviewed with the result that cover for the explosion of steam boilers and pressure vessels became available as an optional addition only.

25. For example, cover for sprinkler leakage, employee dishonesty, and personal injury liability were included as part of the unendorsed BOP, while such cover was only available through endorsement of the SMP policies available at the time. The standard BOP also included automatic inflation and seasonal adjustments of cover limits, which were not part of the standard SMP policies.

26. It is noteworthy that the gross and simplified earnings plans, which were intended to cover relatively large businesses, covered losses resulting from EDP damage from as far back as 1969, whereas the BOP program, designed for small and medium-sized operations, first included this endorsement in 1983.

and EDP terminals in smaller business accounts for this limitation." In a sense, this then ushered in a new era such that by the time of the 2006 revision of the BOP, time-element coverage with an annual aggregate of $10,000 was included for the suspension of operations brought about by computer viruses and harmful code that disrupted computer and network operations (Krauss, 2010).

Business Income Insurance

On Jan. 1, 1986, the Insurance Services Office (ISO) introduced the business income coverage (BIC) form as an alternative to the gross earnings form (French, 2013). The BIC was designed to serve as an independent stand-alone policy, without the need to be attached to an underlying property insurance policy (although direct physical loss to property was and still is required). Thus, it was the first formal stand-alone business interruption policy in the U.S. Following the introduction of the BIC, BI insurance was often referred to as business *income* insurance, as many believed that this gave a clearer indication of what this coverage protected.

The perils insured against under the BIC, together with limitations and exclusions, were specified in the three standard property cause of loss forms (i.e., Basic, Broad, and Special forms). Each of these forms constituted a list of perils and/or exclusions for which cover would be provided and, hence, offered policyholders a choice of coverage (Bisco, Fier, & Pooser, 2020).[27] Amendments to these forms were also allowed. BI insurance further retained the concept of actual loss sustained, although the first BIC form of 1986 recognized the difficulties in determining actual losses exactly and thus referred to the "actual loss of business income you sustain." The gross earnings and the business income forms remain the two most common business interruption forms in use. In theory, the amount of insurance coverage under the two policy forms should be equivalent, although the loss calculation methods differ significantly (French, 2013).

For business income policies, business interruption losses are determined as they were for simplified earnings plans, namely as the net profits (if not for the interruption) plus continuing expenses. In contrast, business interruption losses for gross earnings policies are determined as gross earnings (if not for the interruption) less saved variable expenses. The fact that neither policy is formula-based has led to litigation between policyholders and insurers, particularly on the issues of:

- The state of the economy.
- Trends in particular industries.
- The impact of a particular catastrophe on the local business climate.

Despite the move away from standardized forms, the insurance industry continued to categorize business income policyholders as either manufacturing or mercantile business entities, with the distinguishing difference being the use of the insured property. The inability to use or occupy property to raise sales or lease income would affect mercantile operations, while the inability to produce stock would affect the profits to be derived from the manufacturing process.

27. The special cause of loss form is an "open-peril" agreement that only lists exclusions.

Smaller businesses continued to purchase BI insurance either through independent insurance agents or directly from the sale forces of insurers. The stronger negotiating power of larger business, however, meant that these business owners could work with insurers to develop manuscript policies, which offered broader coverage and addressed the perils specific to the operations of the business (Borghesi, 1993). These manuscript policies particularly proved their value during 1992, a year that would be known for several unrelated catastrophes from both man-made and natural perils that resulted in significant business income losses due to the disruption of operations—not all of which were covered by standard business interruption policies.

The Catastrophes of 1992 and Measurement of Business Interruption Losses

In April 1992, as the Chicago River breached an underground tunnel system, civil authorities ordered the electrical power supply to downtown Chicago to be shut off and the area to be evacuated until the flooding was alleviated.[28] Later in the same month, widespread riots across Los Angeles led to a dusk-to-dawn curfew being instituted.[29] Although property damage was arguably curbed by the curfew, it meant that many retailers could not operate during what would normally be their most profitable business hours because customers and employees could not access their stores. Still in 1992, the widespread power outages and contaminated water supply following Hurricane Andrew in August resulted in an extended disruption to several businesses, long after the wind and rain had passed.[30]

Hurricane Andrew, in particular, emphasized the significance of post-loss economic factors in measuring business interruption losses and stressed the two competing approaches: 1) the Economy Considered; and 2) the Economy Ignored (Miller & Jean, 2010). The Economy Ignored principle looks to the past to measure an insured's loss relative to pre-loss business levels, without appreciation for post-loss market conditions. An example of this principle arising from Hurricane Andrew is the case of *American Automobile Insurance Company v. Fisherman's Paradise Boats Incorporated* (1994) in which the insured (Fisherman's) filed a claim for lost profits following closure of its store as a result of significant damage at the hands of the hurricane. Fisherman's submitted evidence that the increase in demand for boating equipment following the hurricane would have significantly increased its sales had the store not been damaged but instead positioned to reap benefit from the post-hurricane economic conditions. The U.S. District Court for the Southern District of Florida, however, ruled that net income projections should not itself be affected by the peril and lead to the insured gaining windfall profits. Thus, conditions of the post-loss economy were ignored by the court.

In contrast, however, is the case of *Stamen v. Cigna Property & Casualty Insurance Company* (1994) in which the same court followed the principle of Economy Considered

28. The first businesses were allowed to reopen after three days, but some buildings remained closed for multiple weeks. Several insurance disputes revolved around whether the water damage was caused by a flood or a leak.

29. The 1992 Los Angeles riots were sparked by the acquittal of four Los Angeles Police Department (LAPD) officers, who were charged with using excessive force in the (videotaped) arrest of Rodney King. The riots ultimately led to 63 deaths and the arrest of more than 12,000 people.

30. The casualties in Hurricane Andrew's path included 187,500 homes in South Florida, power lines in Louisiana, and oil platforms in the Gulf of Mexico.

and endeavored to place the insured in the post-loss position that it would have held had it been able to continue its operations (Miller & Jean, 2010). The insured convenience stores of Stamen also suffered physical damage as a result of Hurricane Andrew and remained closed for differing periods of time. Most of the stores produced increased profits after reopening, and in seeking recovery for business interruption losses, Stamen thus factored in the profits the stores would have made if they had opened immediately after the hurricane. The court ruled that in estimating the profits that the insured would have made had the *loss* not occurred, the term "loss" refers to the property damage suffered and not to Hurricane Andrew, and that there was thus no threat of windfall profits as the insured sought only to recover actual losses sustained.

Subsequently, the courts have continued to apply both the Economy Ignored and Economy Considered principles to BI insurance in measuring business interruption losses, based on the actual policy language under consideration (French, 2013). Neither approach has been found to consistently benefit either insureds or insurers, as the facts and circumstances of every loss differ.

Business Interruption Insurance in the 21st Century

In the first decade of the 21st century, the U.S. experienced a series of unprecedented catastrophes that highlighted the interdependencies of the modern economy. On Sept. 11, 2001, the U.S. experienced the largest terrorist challenge to date in an event that had a permanent impact on the global economy. In August 2003, more than 50 million North Americans in the northeastern part of the continent were deprived of electricity for several days as a result of a failure in the power distribution infrastructure that was attributed to a software error in a control room in Ohio. Within a 15-month period in 2004 and 2005, seven major hurricanes made landfall in the U.S.[31] The costliest of these was Hurricane Katrina, which inflicted lasting damage and led to a spate of litigation concerning BI insurance (Kunreuther & Michel-Kerjan, 2011). In turn, the 2008 financial crisis had worldwide repercussions that affected both the capacity and risk management strategies of the writers of BI insurance.

In the next decade, business interruption proved to be the most significant risk to business operations around the globe. This was made clear by the fact that business interruption and supply chain disruption ranked as the most significant threat to businesses among the surveyed panel of global risk management experts in eight out 10 years, according to the Allianz Risk Barometer (Allianz Global Corporate & Specialty, 2021).[32] During this decade, cyber incidents also emerged as a major cause of business interruption.

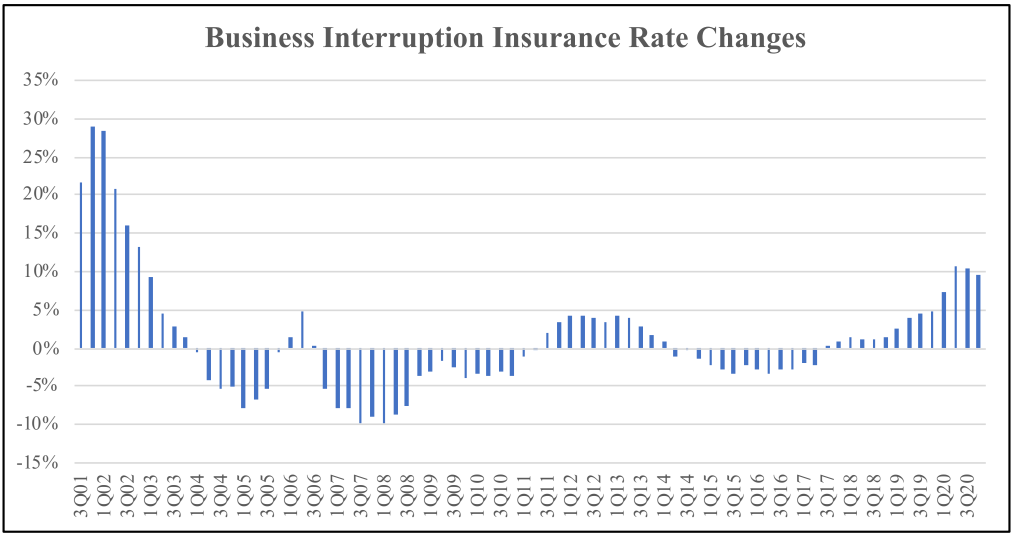
The ascent of business interruption to be regarded as the most significant threat to commercial operations occurred against a backdrop of disputes over loss-valuation language in business interruption policies. This has often resulted in the inefficient resolution of claims, excessive litigation, and conflicting decisions, which have given rise to varying payments to policyholders under similar policy language and events.

31. Charley, Ivan, Frances, and Jeanne in 2004. Katrina, Wilma, and Rita in 2005.

32. The Allianz Risk Barometer is an annual report identifying the top corporate risk for the next 12 months and beyond, based on the insights of risk management experts. In 2012 and 2020, business interruption ranked second, behind economic risk and cyber incidents, respectively.

On the other hand, insurance rates for BI insurance have shown evidence of an underwriting cycle that follows the general economic environment prevailing in the U.S. throughout the 21st century, as can be seen in Figure 1 (Council of Insurance Agents & Brokers, 2021). The 9/11 catastrophe and related business interruption losses brought about a significant increase in the rates for BI insurance, which lasted well into 2003, while the modest upward trend in rates for BI insurance that started in the latter half of 2017 gained momentum in 2019 and 2020.

Figure 1: Quarterly Rate Changes, Q3 2001 to Q4 2020



Constructed from Council of Insurance Agents & Brokers (CIAB) data.

While it has been understood for decades that business interruption is one of the most important risks facing most businesses, the challenges associated with the economic disruptions of the COVID-19 pandemic have created new appreciation for the relevance of this exposure. Although new COVID-19-related cases continue to be filed, the vast majority of COVID-19-related insurance litigation is arising from business income insurance policies, thus highlighting the prominence of this form of insurance (Covid Coverage Litigation Tracker, 2022). Insurers have predominantly denied COVID-19-related BI insurance claims due to a lack of physical damage from a named peril. To date, most court rulings have upheld this decision (Klein & Weston, 2020). Consequently, the BI insurance claims resulting from the 9/11 terrorist attack, Hurricane Katrina, and cyberattacks have had the most significant impact on the insurance industry thus far in the 21st century.

The 9/11 Terrorist Attack

It is well known that despite the significant property damage resulting from the Sept. 11, 2001, terrorist attack, the majority of losses (insured and uninsured) resulting from the attack were ascribed to business interruption losses (Insurance Information Institute, 2008). Many of these losses arose in the New York City area in instances where an insured peril prevented access to the insured premises. However, disputes as to whether all of these losses were insured arose.

Significant litigation pertaining to the interpretation of civil authority clauses arose from the Federal Aviation Administration's (FAA's) nationwide ground-stop order of the entire aviation system (Moses, 2007).[33] The litigation centered on policy limitations, which specified either a causation or a purpose requirement for business interruption losses to be recoverable. The bone of contention was whether the notice to close all operations at all airports was a result of the physical damage that had occurred or the fears of further attacks.

In some instances, such as the case of *The City of Chicago v. Factory Mutual Insurance Company* (2004), this question was easily resolved, as the condition for recovery of business interruption losses under the civil authority clause was based on purpose, and losses resulting from actions intended to prevent impending physical damage were explicitly excluded. In contrast, in the case of *United Airlines Incorporated v. Insurance Company of the State of Pennsylvania* (2006), recovery of business interruption losses under a property terrorism and sabotage insurance policy were based on a causation requirement. In this case, it could not be demonstrated that the extended closure of Ronald Reagan Washington National Airport was a direct result of the physical damage at the "adjacent premises" of the Pentagon, as opposed to fear of future attacks. Thus, recovery of the losses was denied by the court.

Contingent business interruption (CBI) coverage was also not extended to instances where cover was found to be nonexistent, as the case of *Zurich American Insurance Company v. ABM Industries Incorporated* (2003) proved. Despite providing janitorial and related services for most of the World Trade Center (WTC) complex at the time of its destruction, ABM Industries was denied its claim for CBI coverage as the applicable policy did not clearly identify the WTC as a dependent property (Kornegay, Killian, & Pickens, 2018).[34] Notwithstanding the above examples, a vast amount of business interruption losses were recovered by insureds. The Insurance Information Institute (III) estimates that industry losses amount $32.5 billion at 2001 price levels, a third of which is attributed to insured business interruption losses (Insurance Information Institute, 2008).ce industry thus far in the 21st century.

Valuing Business Interruption Losses Resulting from Hurricane Katrina

In late August 2005, Hurricane Katrina swept through the southeastern parts of the U.S. to become one of the deadliest natural disasters in American history. It led to approximately $41.1 billion in insured damage at the time of the loss, which, after adjusting for inflation, more than doubled the previous record for insured losses in the U.S. of Hurricane Andrew (Miller & Jean, 2010). From the start, the question of whether damage was caused by wind or water became a key focus of Katrina-related litigation, and the first lawsuit was filed just days after the event. This was a critical issue, as a tremendous storm surge followed Hurricane Katrina in several coastal areas. Flood damage resulting from such storm surges are typically excluded under

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33. The ground-stop order included a notice to close all operations at all airports, nationwide, and was lifted on Sept. 14, 2001.

34. Dependent properties are typically described as premises operated by those either directly supplying or receiving goods or services from the insured.

standard commercial property insurance policies and insured separately under the federal government's National Flood Insurance Program (NFIP) or by endorsement.

A notable case was that of *Berk-Cohen Associates, LLC v. Landmark American Insurance Company* (2009), where the policyholder was the owner of an apartment complex that suffered a series of unfortunate events. First, a tornado struck the apartment complex two weeks before Hurricane Katrina and inflicted initial damage. Before any repairs had been made, Hurricane Katrina further decimated the complex. Then, while the post-Katrina repairs were underway, a fire broke out at the complex, halting the repair process. Once the repair process had recommenced, a motorist collided with an electrical transformer that supplied power to the building, causing a power outage. Ultimately, the repair process took almost two years to complete (Miller & Jean, 2010).

When claiming for lost rental income under a business income insurance policy, however, the insured and insurer could not agree on the value of the loss. The dispute revolved around the question of whether the Economy Considered principle should be applied in light of the increased rental values following the housing shortage brought about by Hurricane Katrina. To add to the conundrum, the policy included wind as a covered peril but specifically excluded flood as a covered cause of loss. Furthermore, lost profits due to favorable market conditions brought about by a covered peril, such as wind, were also explicitly excluded.

In this case, the court allowed for the policy language, apparently intended to preclude consideration of favorable post-loss business conditions, to be circumvented and ruled that since the policy did not expressly *exclude* lost profits from an excluded cause of loss—in this case, flooding—the favorable post-Hurricane Katrina market conditions should be taken into account. Similarly, in the case of *Sher v. Lafayette Insurance Company* (2008), the Supreme Court of Louisiana affirmed the intermediate appellate court's ruling that in determining the policyholder's actual loss of business income, it should be interpreted to mean the amount the policyholder would have earned if their business had not been damaged by the hurricane, but the area around their business had been.

On the other end of the spectrum, however, was the ruling in *Catlin Syndicate Limited v. Imperial Palace of Mississippi Incorporated* (2010). The policyholder operated a casino that was damaged by Hurricane Katrina and subsequently shut down. However, it reopened while many of the neighboring casinos remained closed. Consequently, the casino produced revenues after reopening that exceeded pre-Katrina revenue. The policyholder accounted for this post-hurricane experience in determining their business interruption loss while the insurer's calculation was based purely on pre-hurricane experience.

The valuation language in the policy at issue stipulated that "due consideration shall be given to experience of the business before the loss and the probable experience thereafter had no loss occurred" (French, 2013). Ultimately, the court interpreted the phrase "probable experience thereafter" to mean the probable experience that the policyholder would have had post-catastrophe, based on the assumption that post-catastrophe experience would have been identical to pre-catastrophe experience. Since the valuation of business interruption losses under the existing policy language may be speculative, different courts (and in some cases the same court) thus had different interpretations of how "probable experience" should be determined, often leaving it to the policyholder to prove what their hypothetical earnings and expenses would have been.

In addition to disagreement on whether post-loss economic conditions should be considered, the courts also reached inconsistent conclusions regarding whether and when certain expenses are recoverable under business interruption policies. In particular, the costs incurred by a policyholder in determining the amount of an insured loss, often known as "claim preparation fee allowances," is often subject to incomplete coverage. Where provisions relating to claim preparation fee allowances limited coverage to costs incurred either "at the request of" or "required by" the insurer, it was left to the insurer's discretion to determine the extent to which they would reimburse the policyholder for claim preparation services.

The valuation of business interruption losses in instances where the policyholder had been operating at a loss prior to the interruption and was projected to continue doing so if no interruption had occurred also adds complexity. Most unendorsed business interruption policies specify that the object of insurance is the net income that would have been earned during a period of suspended business operation if no physical loss or damage had occurred *and* the continuing normal operating expenses incurred during the period of suspended operations (French, 2013). However, different courts have interpreted the meaning of the word "and" in the above sentence differently.

For example, in the case of *Continental Insurance Company v. DNE Corporation* (1992), the court ruled (and affirmed on appeal) that the insured loss should be determined by adding the net income and the continuing operating expenses. The court stated explicitly that if the net income is a negative number (i.e., a net loss), then the amount to be recovered should be the continuing operating expenses, reduced by the amount of the net loss. Thus, the court would allow the policyholder to recover an amount from the insurer only if the continuing fixed expenses exceed the amount of the net loss.

In contrast, however, in the case of *Amerigraphics Incorporated v. Mercury Casualty Company* (2010), the court ruled (and also affirmed on appeal) that the meaning of the word "and" was not the same as "plus," "offset," "subtract," or "minus" and that the policyholder was entitled to recover its continuing operating expenses *without* any offset for projected negative net income. The policyholder thus recovered its continuing fixed expenses without any adjustment for the net loss that was expected had its business operations not been interrupted.

The interpretation of loss valuation language for policyholders that are projected to lose money throughout the policy term became particularly relevant following the 2008 financial crisis. Many insurers contended that policyholders suffering a business interruption during or shortly after the crisis suffered no loss at the hands of the interruption, as they would have been operating at a loss even if their business had not been interrupted (French, 2013).08).

Cyber Business Interruption and Other New Forms of Business Interruption Insurance

As companies become networked operations with data warehouses, service platforms, and customer bases being their primary assets, cyber incidents emerged as a major cause of business interruption for companies. Whether resulting from basic system outages or sinister cyberattacks, business interruption following a cyber incident has become regarded as a key peril to which all businesses are exposed and which can lead to extensive disruptions in operations. Apart from the loss of revenue resulting from the interrupted digital supply chain, victims of cyber incidents may also face liability claims following a data breach, the cost of reinstating digital infrastructure and restoring data, fines and penalties, and the indirect cost of damage to their reputation.

In 2017 and 2018, the malware attacks of WannyCry and NotPetya dominated the cyber business interruption landscape and disrupted shipping, logistics, and manufacturing companies (Allianz Global Corporate & Specialty, 2019). Insurers saw a growing number of business interruption losses, triggered by cyber incidents, exceeding $100 million from companies as distinct as FedEx and Apple. These attacks highlighted the risk of interruption and potentially even physical damage from cyber incidents, which were not necessarily considered in the underwriting processes but found to be covered under traditional commercial insurance policies (Applegate, 2013).[35] The non-affirmative cyber exposures, or "silent cyber" exposures, meant that both insurers and insureds were left uncertain as to the level of protection against interruption from cyber events, thus giving rise to the creation of a dedicated cyber insurance solution (Allianz Global Corporate & Specialty, 2019). Cyber insurance, which includes cover for resultant business interruption, became available both as a stand-alone policy and as an endorsement to existing policies, making clear the coverage for cyber-related risks.[36]

As commercial activities have continued to move away from brick-and-mortar locations, other new forms of BI insurance have also been born. This includes coverage to exposures presented by vehicles and mobile equipment such as photographic drones while away from the policyholder's locations. Endorsements are also available to restauranteurs to provide cover against service interruptions brought about by food contamination or utility service disruptions (Klein & Weston, 2020). Other modifications have been more pragmatic, highlighting the concept of time element coverage and stipulating an explicit allowance for post-catastrophe demand surge leading to an increase in the cost of materials, services, and labor.

Conclusion

The theoretical premise of BI insurance is quite simple to grasp: the indemnification of losses brought about by the disruption of business caused by a direct physical loss. In practice, however, the accurate determination of covered losses for this form

35. Direct or indirect physical damage resulting from cyber incidents is also known as kinetic cyber. Early examples include an attack on a water management system, leading to environmental damage in Queensland, Australia (2000); a rerouting of trams to cause physical injury in Lodz, Poland (2008); and infrastructure damage to a fuel enrichment plant in Natanz, Iran (2010).

36. Cyber insurance is also referred to as cybersecurity insurance or cyber risk insurance.

of insurance has proven to be challenging, as phrases such as “normal operations,” “probable experience,” “same quality of service,” and “due diligence and dispatch” have often led to dispute. In turn, the time element of coverage, the concept of “actual loss sustained,” and the principles of Economy Considered and Economy Ignored introduce some subjectivity to the settlement of business interruption claims. Understanding the history of this important source of coverage in the private insurance market and its development is important to insurance regulators and other policymakers who are wrestling with the way forward.

In addition, the businesses covered by BI insurance are non-static. As the economy has progressed, so too have the specifics of the coverage required and offered. With each new catastrophe, we are reminded that as the modern economy continues to grow more complex, the intricacies of BI insurance continue to deepen. While the policy forms and underlying businesses being covered continue to evolve, a review of the history and development of BI insurance is quick to reveal that there is indeed little new under the sun.

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