



**Corporate Accounts, Damned Lies
and Statistics**

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Abstract:

In the current climate of accounting reports, it is useful to turn to sources of information on businesses other than accounts compiled according to prevailing accounting standards. The national accounts compiled by the Australian Bureau of Statistics according to the principles of the *System of National Accounts 1993 (SNA)* provide an alternative view of financial statistics. This article compares and contrasts the two views and highlights the usefulness of an alternative, principles based, view of the accounts.

Key words:

National Accounts
SNA
Financial Statistics
accounting

1. Introduction

As a response to accounting reports such as those associated with the Worldcom and Enron collapses, many are calling for a move to better business reporting standards. This is often a call for a move to principles-based reporting of business accounts. That is, rather than a black letter law approach where information can be reclassified or concealed to make the bottom line look better as long as it meets the narrow "legal" interpretation, reporting should be done to show a true and fair picture of the transactions and balances of the business to allow users to extract a full and accurate picture of the state of the business and, along with other intelligence, its prospects for the future.

In fact, a form of principle-based accounts is already put together for much of the Australian economy. The Australian Bureau of Statistics (ABS) devotes significant resources to compiling national accounts for the nation within agreed international frameworks. While many readers might be familiar with the national accounts as the source of macro level indicators such as GDP, the system used to compile these accounts is flexible and can be implemented at different levels of aggregation. Many ABS business surveys collect data from individual firms on a national accounts basis.

An alternative view of business accounts is therefore available, and the intention of this paper is to explore some of the differences between the two sets of accounts to show how the alternative view provided by the national accounts can be useful.

2. The System of National Accounts

The *System of National Accounts 1993* (referred to as SNA) is the internationally agreed framework for compiling national accounts. It is the culmination of decades of developments in the field of national accounting, and can trace its origins back to attempts to calculate national income and expenditure in Europe in the 17th century.

National accounts compiled according to the SNA framework provide a systematic statistical framework for summarising and analysing economic events, the wealth of an economy and its components. The accounts record production, consumption, income generated by production, the distribution of income among the factors of production and the use of the income, either by consumption or acquisition of assets, the value of the economy's stock of assets and liabilities, and record the events, unrelated to production and consumption, that bring about changes in the value of the wealth stock. Such events can include revaluations, write-offs, growth and depletion of natural assets, catastrophes, and transfers of natural assets to economic activity.

SNA draws upon, but does not adopt, business and government accounting standards, for reasons detailed throughout this paper.

National accounting information can serve many different purposes. The main purpose of national accounts is to provide information that is useful in economic analysis and formulation of macroeconomic policy. The economic performance and behaviour of an economy as a whole can be monitored using information recorded in the national accounts. National accounts data can be used to identify causal relationships between macroeconomic variables and can be incorporated in economic models that are used to test hypotheses and make forecasts about future economic conditions. Using national accounts data, analysts can gauge the impact of government policies on sectors of the economy, and the impact of external factors such as changes in the international economy.

SNA accounts can be compiled at various levels of aggregation, from an individual institutional unit (a firm), through a group of units with common economic objectives, functions and behaviour (called institutional sectors), such as government, households and private corporations, to the highest usual level of aggregation for SNA accounts, the economic territory of a country. This is the consolidation of the accounts of all institutional units resident in an economic territory. An institutional unit is said to be resident within the economic territory of a country when it maintains a centre of economic interest in that territory - that is, when it engages, or intends to engage, in economic activities or transactions on a significant scale either indefinitely or over a significant period of time.

However, in practice, the ability to publish accounts at a detailed level is restricted by the fact that the data used are collected by the ABS under the *Census and Statistics Act* and are subject to strict confidentiality constraints.

By contrast, business accounts have objectives which are different from those of national accounts, principally reporting on the solvency and profitability of an individual enterprise to meet a variety of purposes including reporting to shareholders and regulators, determining taxes to be paid and determining who has a claim on the residual value of the business in the case of bankruptcy.

3. Some principles of the SNA

The objective of SNA accounts is to capture the economic reality underlying the flows and positions they record, and to do this they rely on some basic principles.

It is not the intention of this section to summarise the 5 cm thick SNA in a couple of pages, but to outline some of these basic principles which underpin the accounts in plain English and give some examples to illustrate the alternative view SNA accounts provide, with particular reference to business reporting versus SNA financial statistics.

3.1 Units, Reporting Entities and Transactions

The SNA defines institutional units as economic units which are capable of owning assets and incurring liabilities on their own behalf. They can engage in a full range of economic activity.

Whereas the reporting entity in business accounting is the world-wide operations of the firm or group of firms, the entities employed by SNA are in some sense both wider (whole industries, sectors and ultimately the economy) and narrower (cross border activities are summarised in balance of payments, international trade and international investment categories and not in industry or sector categories).

Of the activities institutional units engage in, the SNA draws a distinction between activities such as production and consumption and the transactions associated with those activities that are recorded in the accounts. Transactions are interactions between institutional units, such as the exchange of ownership of a good. The physical process by which a good is produced is separate from the subsequent transaction in which it may be sold or supplied to another unit and is recorded separately in the accounts.

3.2 Symmetry

Each flow and stock in the SNA is intended to be measured identically for the parties involved. For example, the value of supply of commodities equals the value of use of commodities in any period; for every sale there is a purchase of the same value; and for every asset there is a liability of the same value (equity is treated as both an asset and a liability in the SNA).

The accrual recording of flows has as an objective that the two sides of a transaction are recorded at the same time and market valuation of assets ensures that assets and their liability counterparts are valued the same.

On the other hand, business and government accounting is not constrained by symmetry – the accounting is from the perspective of the business being reported. Sometimes this leads to national accounting outcomes different to expectations resulting from business and government reports.

3.3 Accrual recording

The SNA records flows on an accrual basis. Flows are recorded at the time economic value is created, transformed, exchanged, transferred or extinguished. This means that asset sales and purchases are recorded when ownership passes, services are recorded when provided, output at the time products are created and intermediate consumption when materials and supplies are being used. The SNA favours accrual accounting because the timing of accounting is consistent with the real world economic events being recorded. This agreement allows, for instance, the evaluation of the profitability of productive activities correctly (without the disturbing influence of leads and lags in cash flows) and to calculate the net worth of a group of institutional units correctly at any point in time.

Accrual accounting is particularly relevant to the timing of internal transactions (such as output that is added to the inventories of the producer), exchanges in which the parties deliver at different times (such as sales with deferred payments) and obligatory transfers (taxes and flows connected with social security).

Employee options plans are an example of where the value of services provided (labour) and ultimate payment for those services (exercise of an in-the-money option) can be separated in time significantly, and pose quite a challenge for accrual treatment in both business and national accounting. World-wide, national accountants (and shareholders!) are breathing easier following the fall from favour of this particular method of building incentives into salary packages.

3.4 Market valuation

Institutional units hold assets and incur liabilities. Balance sheets are compiled for institutional units, or groups of institutional units, and record the values of the assets they own or the liabilities they have incurred. Assets as defined in the SNA are entities that must be owned by some unit, or units, and from which economic benefits are derived by their owner(s) by holding or using them over a period of time. Financial assets and fixed assets, such as machinery, equipment and structures which have themselves been produced as outputs in the past, are included.

The SNA requires that all transactions in, and stock levels of, assets and liabilities be recorded at their current market value. Market value is for all practical purposes equivalent to the fair value concept used in business accounting standards, and is defined as the amount of money a willing buyer pays to acquire something from a willing seller, when such an exchange is between independent parties and one into which only

Corporate Accounts, Damned Lies and Statistics

commercial considerations enter. This results in the economic accounts measuring the current exchange value of all assets and liabilities in current money terms, that is the value at which they are transacted, or could be exchanged, for cash.

3.5 Change of ownership basis of recording

Transactions in financial assets (including payments of cash) are recorded in the SNA on a change of ownership basis. Some financial claims/liabilities defined in the SNA, in particular trade credits and advances, are the implicit result of a non-financial transaction and do not involve an explicit transaction (as evidenced by a specific contract to exchange ownership). In these cases the financial claim arises implicitly when its non-financial counterpart occurs.

3.6 Separation of Income and Capital Gains

As befits a system whose signature output is Gross Domestic Product, the SNA deliberates at length on the concept of income (and expenditure) and its measurement. The nearest SNA concept to profit, the operating surplus of businesses, is not the same as business accounting measures of profits. Business accounting "bottom lines" contain capital gains (or losses) as well as operating profits and losses. The clear separation of income from capital gains by SNA, together with a strict application of valuation of flows and stocks with reference to market prices rather than contractual prices, leads to both philosophical and practical differences in outcomes with business accounts.

For example, businesses often enter financial derivative contracts to hedge against risk of increased expenditure on a portfolio, for instance because the interest payments are denominated in foreign currency. Under hedge accounting, the capital gain in the derivative contract will be offset against increased expenses if the AUD depreciates. Under SNA accounting the increased expense will reduce net income, with the capital gain on derivatives being recorded as a revaluation gain. Both systems will generate the same change in net worth, but the presentation and detail is significantly different.

However, these national accounts data, by themselves, do not show the extent to which enterprises have hedged the net positions of their foreign-currency-denominated assets and liabilities. One way to obtain an approximate measure is to collect information on the notional value of derivative contracts. Such notional values are not needed for any national or international economic accounting aggregates and, accordingly, are not normally collected by the ABS. To obtain a more complete picture, the ABS, with the assistance of the Reserve Bank of Australia, supplemented the Survey of International Investment with additional information on foreign currency hedging from a wide range of enterprises, both financial and non-financial. The aim of the supplement was to capture quantitative and qualitative data about Australian enterprises' foreign currency exposure and the risk management practices associated with that exposure.

4. Application of the principles to financial data (with examples)

It is clear that national accounts are not simply the sum of business accounts, but sets of accounts compiled on a different basis.

This section of the paper gives examples of alternative views provided by business accounts and national accounts, contrasting the two views and their uses.

4.1 Repurchase Agreements

An example of the different views given by business reporting an national accounts as compiled by the ABS is the treatment of securities purchased or sold under agreements to re-sell or repurchase at a future date, so-called "repo" contracts. Repo contracts may be entered into for very different motivations by the participants: one party may be seeking to borrow cash using securities as collateral, while the other may be covering a short sale by acquiring securities in order to settle. Treatments recommended by accounting standards, while providing correct outcomes on the bottom lines of transactors, irrespective of motivation, result in asymmetric outcomes in detail such that more than one party can record beneficial ownership of the one parcel of securities, leading to double-counting in aggregate security asset holding estimates. Double-counting is particularly pronounced in periods where the underlying security is in short supply. The ABS has determined that the treatment which is consistent with the SNA is to treat the transactions underlying repo contracts as security trades in all cases, thus preserving detail and eliminating double-counting.

The following table shows the reconciliation of data reported based mainly on accounting standards for national general government securities for the June quarter 2002 and new data available from the Australian Prudential Regulation Authority (APRA) collections which have allowed adjustments to be made to reported data to bring them to an SNA basis. The data based on business reporting resulted in a double-count of \$7 540 million, that is there was \$7 540 more being reported as assets than as liabilities. The SNA framework, with its principle of symmetry, cannot accept this inconsistency, and the adjustment to an SNA basis results in assets equaling liabilities. For many purposes, the SNA view is more useful.

**NATIONAL GENERAL GOVERNMENT LONG-TERM DEBT SECURITIES:
DATA AND REPO ADJUSTMENTS, JUNE 2002 (\$M)**

	<i>Reported data</i>	<i>Repo adjustments</i>			<i>Adjusted data</i>
		<i>Buy</i>	<i>Sell</i>	<i>Net</i>	
	\$m	\$m	\$m	\$m	\$m
Liabilities of National General Government	64,155	n.a.	n.a.	n.a.	64,155
Total assets	71,695	18,326	-25,866	-7,540	64,155
Held by					
Reserve Bank	12,554	n.a.	-1,064	-1,064	11,490
Banks	1,807	14,440	-13,528	912	2,719
Other depository corps	3,616	1,062	-4,143	-3,081	535
Life insurance	6,723	449	-389	60	6,783
Pension funds	11,721	1,361	-1,614	-253	11,468
General insurance	8,571	0	-2,566	-2,566	6,005
Central borrowing authorities	708	0	-51	-51	657
Financial intermediaries n.e.c.	2,786	1,014	-2,511	-1,497	1,289
General government	0	0	0	0	0
Households	73	0	0	0	73
Rest of world	23,132	n.a.	n.a.	0	23,132
Residual	-7,540				0

4.2 Loan, Deposit and Trade Credit Valuation

The SNA recommends the recording of the value of non-tradeable financial assets such as loans and deposits at face value. This does not allow, for instance, for the revaluation of impaired loans to a fair value basis, and could be interpreted as being inconsistent with the basic SNA principle of valuation at fair/ market value. The SNA draws a distinction between tradeable and non-tradeable financial assets. The distinction is made because a tradeable asset, such as a bond, has an observable price, whereas non-tradeable assets do not. The debtor has an obligation to pay the full amount at maturity and the assumption is made that the debt cannot be redeemed in the market. However, it could be argued that the development of markets in impaired debt and the development of complex financial derivatives means that virtually all financial assets can be considered tradeable.

The SNA adopts an all or nothing approach - it records no change in the value of impaired loans until the value drops to zero (that is until it is clear that it cannot be collected), at which point the debt is recorded as dropping to zero through a volume change. Even though the use of provisions would provide one way of approximating the market value, provisions are not included in the system.

The SNA recommendation that loans and deposits be valued at nominal, not market or fair values, militates against early warning of problem loans using SNA based data and introduces inconsistency with other parts of the SNA. There are four aspects to the lack of market data about non-tradeable financial assets.

4.2.1 Interest Rate Sensitivity

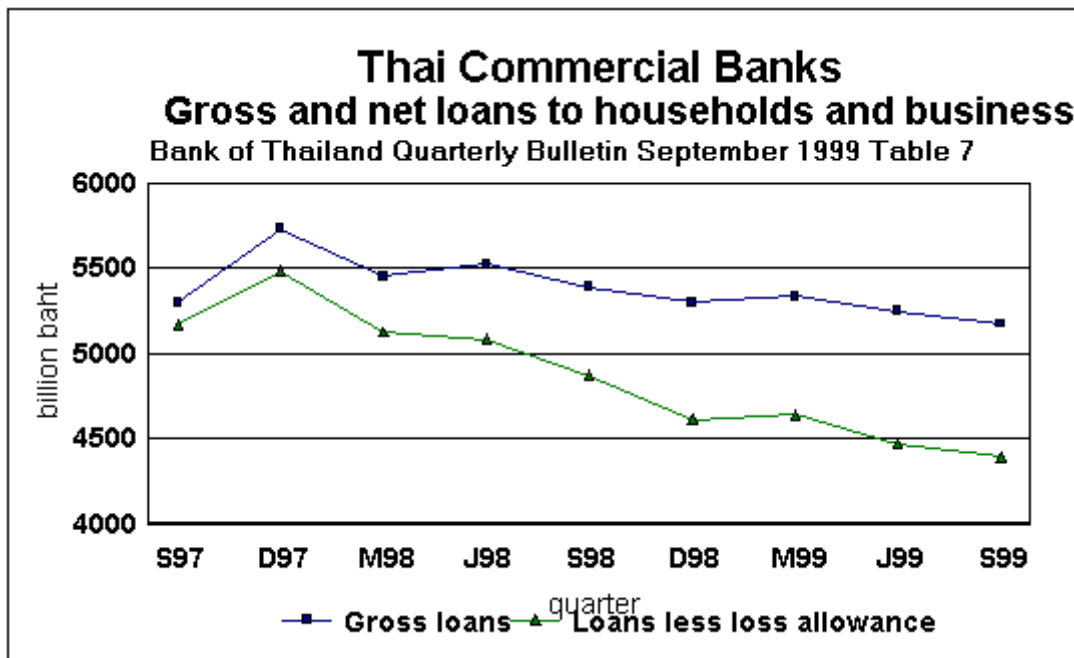
The value of a loan or deposit portfolio will change if market interest rates change, whether the contracts specify floating or fixed interest rates. There is nothing conceptually difficult about both borrowers and lenders repricing such a portfolio based on discounting the cash flows involved in the contracts at new market rates. However, there are practical difficulties in that most portfolios consist of large numbers of heterogeneous fixed, semi-fixed and floating rate contracts, and the workload involved in repricing all the cashflows can be significant. The response to the psychological question of whether interest rate changes result in different behaviour of borrowers on fixed rate contracts is mixed. On the one hand, there seems to be evidence of general inertia caused by the cost of renegotiating loans, and on the other evidence that a considerable number of fixed rate contracts are in fact churned in the market following significant rate changes. That loan portfolio management requires a careful watch on interest rate changes is illustrated by the recent National Australia Bank experience with its US subsidiary Homeside's largely fixed rate mortgage portfolio.

4.2.2 Deposit Valuation

As well as interest rate sensitivity, there are some regulatory issues to do with deposit valuation. Many countries have explicit or implicit guarantees or insurance on some or all of the deposit liabilities of banks and other regulated entities. Such arrangements represent a credit enhancement for regulated institutions. Market valuation of deposit liabilities requires "marking the scorecard" of the regulatory regime in place, a difficult proposition for statistics in the absence of observable transaction values, particularly when the regime in place contains implicit guarantees.

4.2.3 Non-performing Loans

Where large proportions of financial institutions' loan books suddenly become non-performing with little immediate prospect for recovery of full amounts by repayment or by realisation of collateral, then carrying assets at nominal values seems unrealistic. Such episodes can develop very quickly, as illustrated by the following chart.



The ABS has a joint project with the banking regulator, APRA, to modernise data collection arrangements, including improved information on loan provisions, such that fair values could be assigned. No decision has been made on how to implement such information in SNA based accounts as yet. Japan has already implemented fair values for bank loans in their financial accounts. In a sense fair valuation is a form of accrual accounting which matches the bad debt situation to the period in which it occurs, not when ultimately written off. Some early indications from the APRA data collection effort are shown below.

Australian Banks' Domestic Books		
\$million		
	March 2002	June 2002
Gross Loan Portfolio	572 697	600 900
General loan loss provisions	5 459	5 623
Specific loan loss provisions	1 284	1 366

The relatively low values in both general and specific loan loss provisions may indicate that fair valuation of loan assets (and liabilities of borrowers), while desirable conceptually, is not a priority under current circumstances in Australia.

4.2.4 Market Valuation by Proxy

Associated with non-performing loans is the issue of *collateral / credit* quality. Real asset prices impact financial stability, particularly through use of real assets as collateral for loans. In circumstances where rapid decrease in real asset values occurs, loans which originally were over-collateralised might suddenly become under collateralised (or, from the borrower's viewpoint, equity in the asset decreases rapidly and becomes negative).

Such episodes are not new, but statistical observation of such phenomena seems to be confined to hindsight. Traditional methods of measuring capital stock and information collected by prudential regulators do not provide insights into the episodes as they develop. One of the difficulties is price data on real estate assets, which are non-homogeneous by nature and therefore difficult to collect and summarise. By contrasting practices with lending on margin to share traders, it is evident that there is work to be done by statisticians to assist lenders and supervisors of financial institutions.

Share markets form views on the value of listed entities irrespective of hard data about fair values for loan portfolios and credit quality. A market value of shares below the book value of net worth for a financial institution is probably a key indicator of over-valued assets. HIH Insurance is a stark recent example of the market valuing a company substantially below reported carrying value of net worth.

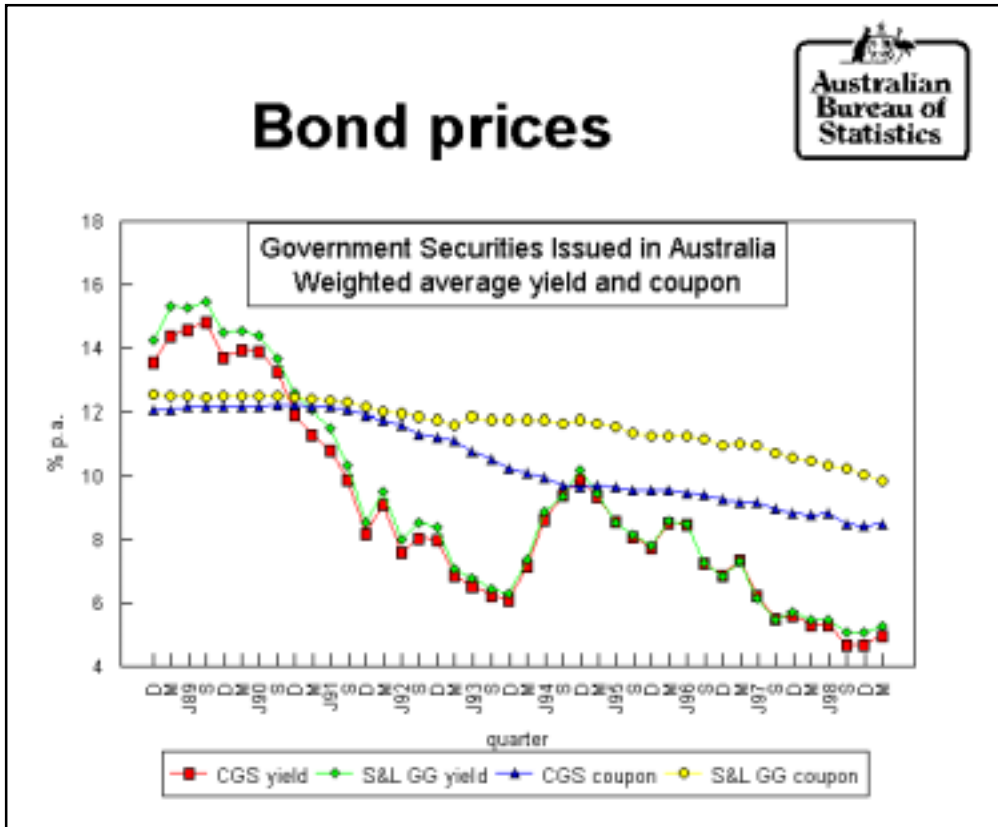
4.3 Interest Income and Expense on Debt Securities

This brings us to another great debate - even if all financial assets were to be valued at market value, what rate of interest should be accrued to the market value? A literal interpretation of the SNA 93 means that in the case of an impaired loan, interest continues to accrue on the face value of the loan. However, this means that interest flows are distorted.

The SNA does not give a definitive recommendation of how to record the interest accruing on a financial asset whose market price changes as a result of a change in prevailing interest rates. This is interpreted by some as meaning that the rate of interest and price of the asset at the time of issue should remain fixed throughout the life of the asset, the so-called "debtor approach". However, this is not in keeping with the basic principles of the SNA outlined above, namely the valuation of all flows and positions at market prices and the accrual principle. These imply that the prevailing market rate of interest should be used to calculate the interest accruing on the market price of the asset. In fact, this results in a consistent set of entries in the flow and position accounts, whereas the alternative treatment does not.

The ABS thinks it is more appropriate to accrue interest on the market value of the instrument. When the interest rate changes, market prices of the bond change to ensure that the interest accruing during the rest of the life of the bond is doing so at the new rate. The debtor approach claims that the interest payable in each period and for the whole life of the bond stays the same despite changes in the market rates of interest.

Does the difference between contractual (coupon) interest and interest determined with reference to market yield matter? Some idea of the magnitude can be seen in the following chart.



5. The Way Ahead

The discussion above gives an idea of the many issues addressed in compiling financial statistics and has, hopefully, demonstrated the usefulness of an alternative view of business accounts. The compilation of financial statistics involves an interpretation of a set of principles and the application of these principles to data collection and the compilation of sets of accounts. The ABS is very active in the international debates on the refinement and application of SNA principles in the light of developments in financial markets, which continue to spawn a bewildering array of innovations and products: derivatives, synthetics, repurchase agreements, stock loans, margin lending, securitisation, revolving credit facilities, mezzanine funding, hedging, overlay mandates, and so forth. At the national level, the ABS is developing Information Development Plans for various fields of economic statistics, including financial statistics. The plans aim to evaluate coverage (gaps and overlaps) in delivery; to assess conceptual fitness and quality of statistics available from both official and unofficial sources; and to prioritise and coordinate future work programs and resource allocations to address unmet demand or quality issues.

6. Footnotes

The interpretation of SNA principles is not always straightforward, and there are international debates on the interpretation of the principles in several cases. Readers interested in following or participating in the debates should refer to the discussion forums on the website of the International Monetary Fund at www.imf.org

The interpretations in this paper are those of the authors and are not necessarily those of the Australian Bureau of Statistics or the international statistical community.

Reference:

System of National Accounts 1993, Commission of the European Communities, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations and World Bank, 1993.

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