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1. Introduction

When the Bretton Woods system collapsed in the early 1970s, Australia, unlike many other developed economies, did not move immediately to a floating exchange rate. Rather, exchange rate policy in Australia moved through several regimes, gradually providing an additional degree of flexibility in the exchange rate. Reforms did not always follow a preset plan but were often a response to external forces exposing deficiencies in the prevailing system.

Eventually, in 1983, the currency was floated and capital controls were dismantled. These were the core reforms that led to the "internationalisation" of the Australian dollar. However, the transition was facilitated by other reforms in Australian financial markets, including, very importantly, the development of an active local bond market and a non-deliverable forward currency market.

It is now 25 years since the Australian dollar was floated. In that time, it has become widely accepted that the Australian economy has benefited greatly from an internationalised currency. The floating exchange rate has acted as a buffer to external shocks, particularly shifts in the terms of trade, which, in Australia's case, can be very substantial. It has allowed the economy to absorb these shocks without the large inflationary or deflationary pressures that tended to result under the previous fixed or managed exchange rate regimes. This has been well demonstrated on a number of occasions, including during recent events in global financial markets.

This paper begins with a brief overview of Australia's move from a fixed to a floating exchange rate and the abolition of capital controls, and provides some information on the extent to which the Australian dollar is now internationalised. It then discusses the implications of this for financial markets, the conduct of monetary policy, the balance of payments and financial stability.

2. Australian dollar internationalisation: a historical perspective⁴

As noted, exchange rate policy in Australia moved through several regimes during the decade or so before the currency was floated. The first major change occurred in 1971, when exchange rate policy shifted from pegging to the British pound to pegging to the US dollar. This was followed by a peg to a trade-weighted exchange rate index and then by a crawling peg against the same index. While the pegs meant there were long periods when the currency did not move, these were interrupted by occasional realignments in response to

¹ This paper draws heavily on Debelle and Plumb (2006). The authors would also like to thank Patrick D'Arcy, Crystal Ossolinski and Sophia Davis for their assistance.

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⁴ For a more detailed discussion, see Debelle and Plumb (2006).

balance of payments and monetary pressures. The realignments invariably caused a good deal of turmoil in markets and the economy more generally.

The Australian dollar was eventually floated in 1983. In essence, the float meant that:

- banks were no longer required to clear their spot foreign exchange positions with the Reserve Bank each day;
- the Reserve Bank ceased announcing an indicative midrate for the Australian dollar against the US dollar; and
- exchange controls were removed.



At various stages in the pre-float era, the exchange rate was used as an instrument to achieve the goals of internal or external balance. At times, the conflict between those goals was the catalyst forcing change in the exchange rate regime. A recurring problem was that, with Australian markets becoming increasingly integrated into world markets, large international capital flows were making it difficult for the authorities to control domestic monetary conditions. The eventual decision to float the currency was made not because the authorities had exhausted foreign exchange reserves, as is often the case in emerging market economies, but because the country was facing large inflows of capital that were undermining monetary control.

Other factors, besides mounting capital flows, also posed challenges to prevailing exchange rate arrangements in the years leading up to the float. At various points, financial markets in Australia developed ways to circumvent the regulatory framework. A good example was the formation of the so-called foreign currency hedge market in the mid-1970s, established entirely by private sector market participants, which operated alongside the physical foreign

exchange market but was outside the direct control of the authorities.⁵ This was a nondeliverable forward market that began as a means of managing exchange rate risk, given the extremely limited forward exchange facilities offered by the Reserve Bank of Australia. The market was onshore, with settlement of contracts taking place in Australian dollars. There was no exchange of foreign currency, and so the forward cover was achieved without violation of existing exchange controls. The authorities were aware of the formation of this market, but chose not to interfere with its development. In the event, as this market allowed banks and corporations to develop their currency trading skills, it helped in the relatively smooth transition from a managed to a floating exchange rate.

3. How internationalised is the Australian dollar?

Kenen (2009) identifies a number of conditions for classifying a currency as internationalised, including:

- no restrictions on domestic or foreign entities transacting in the currency, in both spot and forward markets; and
- foreign entities being able to hold and issue financial instruments denominated in the currency, both in the domestic market and in offshore markets.

The floating of the Australian dollar and the removal of capital controls meant that the Australian dollar satisfied the first condition. With no restrictions on domestic and foreign entities transacting in the currency, turnover in the Australian dollar increased sharply in the years following the float. Today, the Australian dollar is the sixth most traded currency globally, while AUD/USD is the fourth most traded currency pair.⁶ As another sign of internationalisation, more than half of turnover takes place in offshore markets (that is, between non-residents). As noted by McCauley (2006), this is true for most major currencies. A notable exception is the pound sterling, reflecting the financial centre status of London (Table 1).

⁵ See Debelle et al (2006) for more detail.

⁶ See BIS (2007).

Table 1

Global foreign exchange trading

	Global trading	Domestic trading	Offshore trading	Memo: Offshore percentage	
US dollar	2,666	548	2,118	79	
Euro	1,139	264	875	77	
Japanese yen	510	170	340	67	
Pound sterling	461	297	163	35	
Swiss franc	209	69	139	67	
Australian dollar	205	85	121	59	
Canadian dollar	130	40	89	69	
Swedish krona	86	24	62	72	
Hong Kong dollar	86	73	12	14	
Norwegian krone	67	20	47	71	
New Zealand dollar	59	7	51	88	
Mexican peso	39	15	24	62	
Singapore dollar	38	24	13	36	
Korean won	34	27	7	20	
South African rand	29	11	18	63	
Danish krone	28	24	4	14	
Russian rouble	25	25	0	0	
Polish zloty	24	7	18	73	
Indian rupee	21	16	5	22	
Chinese renminbi	15	9	6	38	
New Taiwan dollar	12	7	5	44	
Brazilian real	11	4	7	61	
Hungarian forint	9	4	5	56	
Czech koruna	7	4	3	48	
Thai baht	6	5	2	26	
Turkish lira	5	2	3	56	
Philippine peso	3	2	1	37	

Average daily turnover of spot, outright forwards and foreign exchange swaps in billions of US dollars in April 2007

¹ Domestic trading includes both onshore-onshore and onshore-offshore trading.

Source: BIS (2007), Tables E.1 and E.7.

The Australian dollar also readily qualifies as internationalised on the second condition – ie non-resident participation in Australian dollar financial instruments. This takes several forms: non-residents holding domestically issued bonds; non-residents issuing Australian

dollar bonds into the Australian market; residents issuing Australian dollar bonds into offshore markets; and non-residents issuing Australian dollar bonds into offshore markets.

An important precursor to these markets was the development of the domestic Australian government bond market. This market grew quickly from the early 1980s, after the authorities adopted the general principle that investors should be able to have full confidence that the return they would earn on their government bond investments would be purely market-determined.

Like many other countries, in the postwar years Australia had a range of regulations on the bond market, including the direct setting of bond yields and requirements on some investors to be captive holders of bonds. These were aimed at keeping down the cost of debt, but the distortions they created also prevented a secondary market from developing.

When the government removed those controls in the early 1980s and moved to an auction system for issuing debt, it was initially required to pay very high real yields on its debt issues. But the openness and transparency of the arrangements quickly established the government's credibility. Demand for bonds increased, including on the part of offshore investors, and yields fell noticeably in the first year after the arrangements were adopted.

Once a risk-free government yield curve had been established, the way was open for transparent pricing of bonds by other issuers. The combination of a deregulated bond market and a floating exchange rate with no capital controls in turn allowed development of the cross-currency swap market. Since this market allows investors and issuers to mix and match credit risk, currency risk and interest rate risk in any desired combination, it provided a very significant boost to market activity by both domestic and foreign issuers and domestic and foreign investors.

The Australian dollar bond market is now highly internationalised, although not as much as the Hong Kong dollar, New Zealand dollar, Swiss franc, pound sterling or euro (McCauley (2006)). Table 2 shows that, as at late 2008, about 50% of outstanding Australian bonds were issued offshore, about 60% were held by non-residents and about 40% were issued in foreign currency (and hedged back to Australian dollars).

Table 2 Bonds issued by Australians or in Australian dollars In billions of Australian dollars, September 2008										
		Location of issue		Location of investor		By currency				
lssuer	Total outstanding	Domestic	Offshore	Domestic	Offshore	AUD	Non-AUD			
CGS	59	59	0	24	35	59	0			
State governments	114	77	36	64	50	113	1			
Financials	399	121	278	106	293	137	262			
Corporates	120	50	71	37	84	51	69			
ABS	182	112	70	76	106	113	69			
Non-resident	135	80	55	43	92	135	0			
Total	1,009	499	510	350	660	608	401			
Source: ABS, RBA.										

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4. The implications of an internationalised currency

Financial markets (a)

Exchange rate volatility has been considerably higher in the post-float period, although, of course, the large discrete changes in the exchange rate which occurred in the fixed rate regimes, reflecting the occasional large realignments, no longer occur (Figure 2). Arguably, market participants found the latter to be more damaging than short-run volatility, since discrete administered changes are hard to predict and difficult to hedge against. Market participants readily adjusted to the increased short-run volatility, partly because, as noted, they had honed their trading skills in the non-deliverable forward market. Over time, there has been a widespread move to increased use of hedging by Australian corporations and financial institutions.

While there was an increase in the volatility of the exchange rate, the volatility in nominal interest rates declined (Figure 3). In turn, this contributed to less volatility in the macroeconomy (Simon (2001)). This development is not unique to Australia (Blanchard and Simon (2001)). Not all of this was due to the new exchange rate arrangements. Other economic reforms have also contributed, including those in the product and labour markets, as well as improvements to the policy frameworks for both fiscal and monetary policy (Gruen and Stevens (2000)).



Figure 2



The impact of US news on the AUD/USD is not always predictable. Conventional theory would suggest that negative economic news in the United States should lead to an appreciation in the Australian dollar relative to the US dollar, all else equal. For example, a weaker than expected US employment report would generally be expected to put upward pressure on the AUD/USD, due to its positive effect on expected Australia-US yield differentials. However, because weak US data can also have negative implications for global growth, commodity prices and risk appetite, they can exert downward pressure on the AUD/USD. Which of these effects will dominate depends on the prevailing extent of market volatility and uncertainty (Edwards and Plumb (2009)). In periods of elevated financial market volatility and uncertainty about the global economy, the second effect tends to dominate, such that US data "surprises" are likely to be positively correlated with the AUD/USD. On the other hand, in more normal market conditions, the impact of economic news on yield differentials is likely to be the primary concern, and US data surprises are more likely to be negatively correlated with the AUD/USD. Evidence suggests that this effect has been strongest in the period since 2005, and only appears to hold for US data releases pertaining to growth, employment and production.

Volatility in other Australian dollar crosses, namely AUD/EUR and AUD/JPY, also increases around the times of US data releases. A likely explanation is that news about US economic growth will affect expectations of current and future global growth prospects, which are relatively more important for the Australian dollar.

The Reserve Bank has allowed large swings in the exchange rate during the post-float period. Its main interventions have been only after the exchange rate has moved significantly from its long-run average (Macfarlane (1993), Becker and Sinclair (2004)). As noted by Becker and Sinclair (2004), this strategy of generally buying low (in terms of foreign currency) and selling high has been a profitable one for the Reserve Bank, which, according to Friedman (1953), can be regarded as an indication that the intervention has been broadly successful.

The Reserve Bank has also intervened at times when market conditions seemed unsettled with high volatility and wide spreads. Over time, however, the Reserve Bank has become less concerned about short-term volatility and has intervened less frequently.

This approach to foreign exchange intervention has meant that the Reserve Bank has never seen the need to accumulate a large quantity of foreign exchange reserves, particularly given the risks a central bank faces by holding a large foreign exchange open position on its balance sheet. Holdings of foreign exchange reserves have averaged around USD 20 billion, or about 60% of the Reserve Bank's assets in the post-float period. Relative to GDP, this is broadly in line with many other developed economies and has proved adequate to support the intervention policy the Bank has followed.

(b) Monetary policy

It is widely accepted that the floating exchange rate has served the Australian economy well over the past 25 years.⁷ The flexible exchange rate has mitigated the impact of external shocks on the domestic economy, thereby contributing to a reduction in output volatility.

The transition to a floating exchange rate was not without its difficulties. After the rate was floated, there was no longer a nominal anchor for the economy. A number of frameworks for monetary policy were tried, with varying degrees of success.⁸ Eventually, in the early 1990s, monetary policy moved to an inflation targeting framework, with the inflation target replacing the exchange rate as the nominal anchor in the economy. Under this regime, monetary policy does not target any particular level of the exchange rate; nor, indeed, has the Reserve Bank used intervention to defend any level of the exchange rate. Instead, the exchange rate is now a part of the transmission mechanism rather than the policy target.

Exchange rate fluctuations have played an especially important role in smoothing the influence of terms-of-trade shocks, which, for a commodity producer such as Australia, can

⁷ For a discussion of the experience over the first decade of the float, see Fraser (1992) and Macfarlane (1993).

⁸ Grenville (1997) describes the experience with these various frameworks for monetary policy in the floating exchange rate period.

be very large (Figure 4). Gruen and Wilkinson (1994) documented the relationship between the Australian dollar (in real terms) and the terms of trade.⁹ Chen and Rogoff (2002) found a similar relationship in other commodity-producing countries but noted that the relationship in Australia had been particularly robust.



Under the fixed exchange rate regime, the authorities tried to accommodate terms-of-trade shocks through occasional realignments of the exchange rate. But, invariably, these were too little and too late. Thus, the exchange rate did not successfully buffer the swings in the terms of trade.

In contrast, under the floating regime, the exchange rate has been more effective in countering the effects of terms-of-trade movements, and has therefore assisted in the maintenance of internal balance (Blundell-Wignall and Gregory (1990)). Take the case of a rise in the terms of trade as a result of an increase in the prices of commodities. This provides an expansionary impulse to the economy through an increase in income, while the increased demand for inputs from the export sector also creates inflationary pressure. An appreciation of the exchange rate neutralises these influences to some extent by inducing a substitution of imported goods and services for domestically produced goods and services, and it also puts downward pressure on inflation.

Thus, as Blundell-Wignall and Gregory demonstrate, the nominal exchange rate appreciation induces the necessary appreciation of the real exchange rate to restore internal balance following the terms-of-trade shock. In contrast, under the fixed exchange rate regime, the real appreciation must result from an increase in inflation, unless there is an adjustment in the exchange rate peg. This was certainly evident in the large rise in the terms of trade that occurred in Australia in the early 1950s at the time of the Korean war (Figure 5).

⁹ Australia is effectively a price-taker in most of its export markets; hence there is little endogeneity between the exchange rate and the terms of trade.





The relationship between the floating exchange rate and terms of trade is, of course, not precise. There have been periods when the exchange rate has moved away from a range that might be considered consistent with economic fundamentals at the time. One such example was in the late 1990s. At that time, Australia's terms of trade were rising, but the nominal and real exchange rates declined substantially. Part of this decline reflected the large appreciation of the US dollar at the time, as there was a global portfolio shift towards investment in technology stocks at the expense of so-called "old economy" stocks prevalent in Australia.

Attempts to find a role for variables other than the terms of trade in explaining movements in Australia's real exchange rate have generally proven less successful. At times interest differentials have had an important role, and at various times the stock of foreign liabilities, the current account balance or growth rate differentials have also been found to be influential.¹⁰ In part, the changing influence of some of these variables reflects the varying focus of financial market participants.

In addition to counterbalancing the influence of external shocks, the exchange rate has had a direct influence on inflation. This is in contrast to experience with the fixed exchange rate regimes, under which Australia directly "imported" the inflation rate of the country (or group of trading partners) to which the exchange rate was pegged. Over time, however, the direct influence of the exchange rate on inflation has waned; the pass-through of exchange rate changes to consumer price inflation, through changes in the prices of tradable goods and services, has become considerably lower (Heath et al (2004)). This phenomenon is not unique to Australia. It has also occurred in the United Kingdom, Brazil, Chile and the United States, inter alia. One consequence of this reduced pass-through of exchange rate changes to inflation is that the Reserve Bank has become more tolerant of exchange rate variations and less inclined to intervene in the foreign exchange market.

Two episodes highlight the role that the exchange rate has played in macroeconomic adjustment in the post-float period in Australia. The first occurred in the mid-1980s as the terms of trade declined by around 15% between March 1985 and March 1987. A sizeable depreciation of the exchange rate of around 40% over the same period was linked to the terms-of-trade decline and was concentrated in two large movements in February 1985 and July 1986. The depreciation was sizeable in both nominal and real terms, and the exchange

¹⁰ See, for example, Blundell-Wignall et al (1993), Tarditi (1996) and Beechey et al (2000).

rate arguably overshot the new equilibrium. Inflation did increase, but not to the extent that had occurred when the exchange rate had devalued under the fixed rate regimes. The real depreciation served to counter the impact of the decline in the terms of trade and provided a boost to the tradables sector and a substitution towards domestic production. Perhaps most importantly, the general sense of crisis created by the falling Australian dollar was an important catalyst for the range of reforms to the economy, particularly labour and goods markets. These helped set the scene for the much better performance of the Australian economy over the subsequent couple of decades.

A second episode involved the rise in the terms of trade between 2003 and 2008. The net rise in the terms of trade over this period -65% – was the largest since the boom in wool prices in the early 1950s. Between 2003 and mid-2008, the exchange rate rose by about 40% in trade-weighted terms, the largest cumulative appreciation in the post-float period. This sharp rise helped to dissipate the inflationary pressures on the Australian economy that came from the terms of trade. Whereas in the 1950s inflation rose to a peak of over 20%, in the latest episode inflation peaked at 5%.

(c) The balance of payments and capital flows

Under a fixed or managed exchange rate, the authorities have some degree of influence over composition of the balance of payments as between the current account balance and the capital account balance. For example, they can directly change the level of the exchange rate or they can encourage or repress capital flows through various controls.

This capacity does not exist with a floating exchange rate and an internationalised currency. While a floating exchange rate will precisely equilibrate the balance of payments, it leaves the authorities with no direct influence over its composition between the current account and the capital account. This can be illustrated by the case of Australia.

In the 25 years before the floating of the currency, Australia's current account averaged a deficit of about 2.5% of GDP. This was matched by net capital inflows of similar magnitude, made up of gross inflows of about 2.5% of GDP and negligible outflows. The absence of outflows was the consequence of tight capital controls, introduced during the Second World War, designed to prevent scarce domestic savings from leaving the country.

The removal of capital controls when the currency was floated in 1983 saw capital outflows surge. But, within a relatively short period of time, capital inflows increased even more. On balance, foreign investors were attracted by the changes to the economy that followed the liberalisation of exchange arrangements. In the 25 years since the float, net capital inflows have averaged 4.5% of GDP (Figure 6).

Figure 6



By definition, higher average capital inflows have meant that the current account deficit has also increased, which begs the question of what has been cause and effect.

It is beyond the scope of this paper to give a detailed answer to this question but it would be wrong to conclude that the widening of the current account deficit was due to less disciplined macroeconomic management. The current account/capital account balances under a floating exchange rate are determined simultaneously by complex economic and financial interactions, in which foreign investors play a significant role. Importantly, if foreign investors decide that they want to invest more in a country, for example because they see it as being well managed and offering good long-run returns, the resulting increase in net capital inflow will – through changes in the exchange rate, other financial prices and economic behaviour more generally – result in the country running a wider current account deficit. This, broadly speaking, has been Australia's experience.

Some commentators argue that a balance of payments position that involves persistent current account deficits with matching capital account surpluses is not sustainable. But Australia has, excepting brief episodes, consistently run such a position for well over a century, yet it remains a stable, well performing economy.¹¹ The lesson we would draw from the Australian experience is that as long as capital inflow is put to good use, and as long as consumers, businesses and financial institutions avoid foreign currency risk on these liabilities, such a balance of payments position is sustainable.

Measures such as the ratio of net foreign liabilities to GDP are not necessarily good indicators of the sustainability of the balance of payments. In Australia's case, this ratio has risen quite noticeably since the floating of the currency, from 27% to over 60% (Figure 7). Yet, as noted, this has not been accompanied by any decline in economic performance or increase in financial instability.

¹¹ See Belkar et al (2007).



Another measure is to scale net foreign liabilities relative to the domestic capital stock, so as to gauge trends in net foreign claims on the domestic capital stock. This measure for Australia shows that, relative to the domestic capital stock, net foreign liabilities have fluctuated around a flat trend, at about 10% (Figure 7).

(d) Financial stability

A striking feature of Australia's experience with a floating exchange rate is that, despite some very large fluctuations in the exchange rate, the health of the corporate and financial sectors has been largely unaffected by exchange rate gains and losses. This reflects the fact that, while Australia has substantial net foreign liabilities, these are mainly denominated in domestic currency. The debt that is not issued to foreign investors in Australian dollars is hedged back to Australian dollars.

The country as a whole is able to do this because foreigners are prepared to hold part of their portfolios in Australian dollars. In other words, the currency risk on external liabilities is borne by foreigners, not by Australians.

It has always been accepted that countries such as the United States, which issue reserve currencies, are able to shed foreign currency risk to foreigners. But other countries can also do this if they are well managed and able to sustain the confidence of foreign investors.

Australians learned early in the post-float period about the dangers of unhedged foreign currency borrowing. In the mid-1980s, some borrowers funded themselves in Swiss francs to avoid paying much higher domestic interest rates. The risks in doing so quickly became clear when the Australian dollar subsequently depreciated sharply against the Swiss franc. Many of these borrowers were unprepared for the rise in the Australian dollar payments required to service their foreign debt liabilities. The scale of this borrowing was small enough that it did not have an impact on the economy or the soundness of the banking system, but it received enough publicity to provide a salutary lesson to Australian banks and borrowers. This episode, together with ongoing experience with a floating exchange rate, has encouraged the extensive hedging of foreign currency loans that is present today. Movements in the exchange rate therefore do not affect the Australian dollar value of these debt liabilities and thereby the ability of the borrower to service (and ultimately repay) those liabilities. Australia's equity liabilities are all denominated in Australian dollars, so their value is also unaffected by movements in the exchange rate.

With foreign liabilities largely in domestic currency and foreign assets denominated in foreign currency, in net terms Australia has a long position in foreign currency (Figure 8). As noted,

this is similar to the situation in the United States. Hence, an exchange rate depreciation reduces the value of Australia's net foreign liabilities. This acts as a countercyclical force on the economy, in contrast to the procyclical force that arises when a country has net foreign currency liabilities.



The Australian case is also interesting because of the role that banks play in intermediating between the domestic economy and international investors. About 50% of the gross foreign liabilities of the country are represented by the foreign liabilities of banks.

The reasons why the banks have assumed such a prominent role in this regard is because of their strong credit rating. Australian banks are among the most highly rated Australian corporates and, indeed, are part of a very small group of AA-rated banks internationally. Australian banks are therefore able to borrow from foreigners on more attractive terms than other Australian corporations, and it is not surprising that, over time, they have accounted for an increasing share of the external borrowings by Australians. Note that Australia does not have many government bonds on issue, which limits this avenue for investment by foreigners.

Foreign liabilities make up about 30% of Australian banks' total funding. Net foreign liabilities are about 15% of assets, which is quite large by international standards (Figure 9). Some commentators see this as a point of vulnerability.





But the evidence from the past year suggests that the tendency to regard foreign liabilities as a point of weakness and foreign assets as a point of strength is too simplistic. Many, for example, had seen the net foreign asset positions of European banks as a sign of strength, but in the event these positions exerted severe pressure on some banks; not only was the credit quality poor, but the funding of these positions left some banks with severe liquidity problems. In effect, those banks had funded long-term US securities holdings with short-term interbank US dollar borrowing. When the interbank market became disrupted, banks were left with a severe liquidity shortage, which ultimately had to be relieved by the Fed providing US dollar swap arrangements.

The important consideration is not whether banks are running a net foreign asset or net foreign liability position, but how they are managing their positions and what residual risks they are running. In the case of the Australian banks, the first point to make is that they fully hedge the currency risk associated with foreign liabilities. Second, the maturity and interest rate exposures on these borrowings are carefully managed in an integrated way with those arising from their domestic borrowings, so that there are no unintended exposures for the bank as a whole. That the Australian banks have been relatively unscathed by the severe "stress test" administered by markets during the past year is an indication that they are prudently managing their exposures.

6. Conclusions

For Australia, the move to an internationalised currency a generation ago has proved to be very favourable. It greatly assisted in the management of the economy, spurred the development of dynamic financial markets and facilitated subsequent reforms to the goods and labour markets. It is hard to avoid the conclusion that the internationalisation of the currency has made a material contribution to the living standards of Australians.

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